

NOVEMBER, 1928
MONTHLY

No. 274

HITCHCOCK'S MACHINE TOOL BLUE BOOK

DIRECT MAIL ADVERTISING

to

*Industrial Machine Shops
Automotive Plants
Railway Mechanical and
Purchasing Departments*

**AND ALL OTHER
MACHINE TOOL
USERS**

**Controlled Circulation
25,000 Monthly**

Published By
**HITCHCOCK PUBLISHING CO.
508 So. DEARBORN ST.
CHICAGO**



— and saves money in machine shops

Oily cast-iron dust and metal chips cannot get inside to injure the windings and clog the air gap of this enclosed fan-cooled induction motor. There is no need for constant inspection and cleaning. You are saved the repair expense caused by fine iron particles working into the windings and causing breakdowns.

There are many applications in machine shops where you will profit by using the Reliance fan-cooled motor. The extra cost is soon saved in many cases by lessened maintenance alone. Of still more importance is the greater assurance of continuous operation.

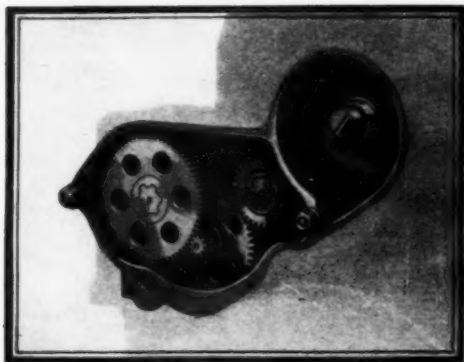
Get Bulletin 103 for details

Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

Branches: Boston; New York; Pittsburgh; Cincinnati; St. Louis;
Detroit; Buffalo; Philadelphia; Chicago; Birmingham

RELIANCE ^{AC} MOTORS
with Ball ^{DC} Bearings

an announcement of progress...



Pick-off Gears..

... are now optional standard equipment for ALL knee type Milwaukee Milling Machines

While it is true that the knee type milling machine has given way to the Lincoln or Automatic type of miller for many straight run jobs, still it always has, and always will be an important factor in many production lineups.

Realizing this fact, together with the demand for simplification on large operations, Kearney & Trecker have arranged their entire line of knee type milling machines so that they may be optionally fur-

nished with either Quick Change or Pick-off feed gears.

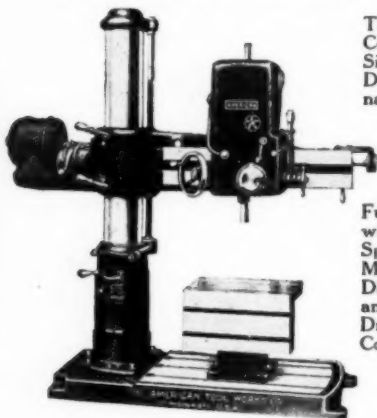
In either case, 18 different combinations of feed are available. However, with Pick-off gears, but one feed, or the entire set, may be ordered.

The Milwaukee is the only milling machine which gives you this optional selection. Again we move forward and demonstrate our earnest desire to provide for you the type of equipment best suited for your individual needs.

MILWAUKEE MILLING MACHINES
KEARNEY & TRECKER

"American" Sensitive Radials

Make Production Records



This shows our
Constant Speed
Simplified Motor
Drive for Alternating Current.

Furnished also
with Adjustable
Speed Simplified
Motor Drive for
Direct Current
and for Belt
Drive thru 4-Step
Cone Pulley.

**Automotive Production Engineers say
of the "American" Sensitive Radial:**

"THIS is a very speedy machine and meets our needs most favorably." Yes, indeed, and there is either a standard or special type which will meet YOUR needs "most favorably" too. It's our business to adapt the right tool to every specific purpose—and we've been at it for over 40 years. High speed drilling, tapping and reaming operations of extremely accurate character are best intrusted to "American" Maxi-Speed Sensitive Drills.

Write for the Interesting Folder

The American Tool Works Company

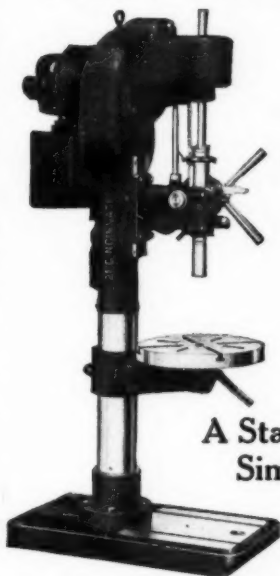
Cincinnati, Ohio, U. S. A.

LATHES

RADIALS

SHAPERS

The Right Machine For Production Drilling



*The DIRECT
DRIVE
Upright*

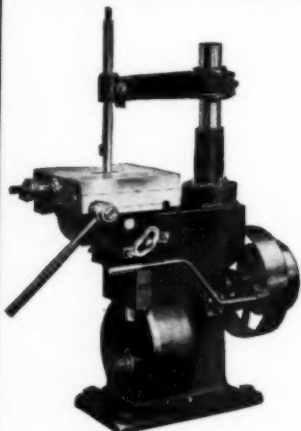
**A Standard Machine
Simplified To Suit
Your Work**

Buy Only the Features You Need

No complications to cause maintenance delays. Simplified design, rigid construction and efficient operation make this a most economical machine for production drilling. Let us send you facts on your particular job.

The Cincinnati Bickford Tool Co.
Oakdale, Cincinnati, Ohio

BAKER KEYSEATERS



Built in
Five Sizes

Designed
for
Miscellaneous
Keyseating
and
Slotting

No. 0 KEYSEATER
Capacity 1" Wide—9" Maximum Stroke

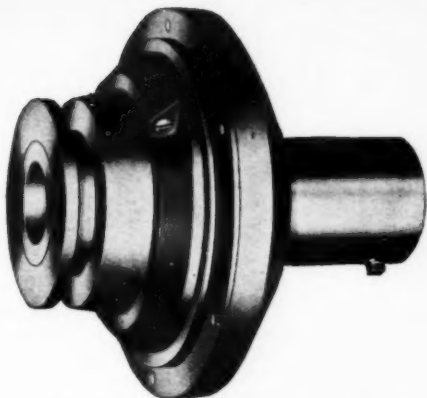
*Exclusive advantages in securing Accuracy and
High Production are:*

1. Draw Stroke Drive.
2. Upper Support for Cutter Bar.
3. Tilting Table (for Taper Keyseats).
4. Simplicity In Operation.

Write for Catalogue

BAKER BROTHERS, INC., Toledo, Ohio

*Builders of Boring, Drilling, Tapping,
Keyseating and Slotting Equipment.*



The Conway Disc Clutch—

Is designed and built to control your machine—

To give it an easy engagement—instant release—

To insure its "business end" of all the power and capacity of its prime mover.

It's enclosed, balanced, has centripetal action, one point, rigid and accurate adjustment, chrome vanadium actuators, steel discs throughout.

There's so much to say about it, that it can't all be said here—

But in one clutch working under your conditions—the whole splendid story is eloquently expressed in capable performance.

Order it and watch it work and you'll always want a Conway Clutch.

Have you our bulletin DC?

The Conway Clutch Co.
West 6th Street, Cincinnati, Ohio

"Incorporate dependability into your product"

Lower Metal Cutting Costs—



STYLE 000 Jr.

For cutting material with
thin walls such as small
I Beams and Angles.

We make teeth in all sizes
and spacing to do best
cutting.

—You can nearly double the production which can be obtained from a solid tooth saw.

—You waste no more material. The kerf is as narrow as the usual kerf of a solid saw.

—Your saws stay sharp much longer than solid saws. The teeth are full high speed steel.

—You get perfect clearance. All friction on sides of the teeth and on the saw plate is eliminated.

—Teeth easily replaced when worn out. A mechanic in your own shop can do the job.

*Write us about the cutting you do.
We tell you the style of*

SIMONDS

**Inserted Tooth
Metal Cutting**

SAW

that will do your work best.

Simonds Saw and Steel Company

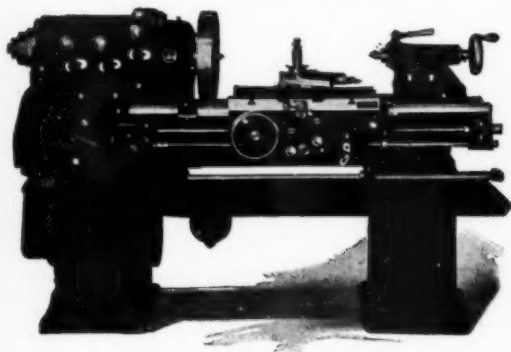
Boston, Mass.
Chicago, Ill.
Atlanta, Ga.
New Orleans, La.
Seattle, Wash.

New York, N. Y.
Detroit, Mich.
Memphis, Tenn.
Portland, Ore.
Los Angeles, Calif.

San Francisco, Calif.

The Monarch Ball Bearing Helical Geared Head Lathe

Silent—Smooth—Powerful



Three and one-half teeth of the oil-hardened helical gears are always in mesh.

There is a noiseless, smooth, constant transmission of power, with higher spindle speeds than are possible through any system of spur gearing.

The result is greater production.

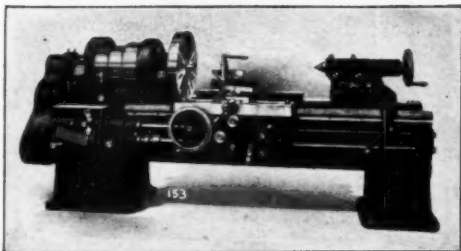
Write for complete description of Monarch Helical Geared Head Lathes from 14 to 30 in., with 5 ft. to 30 ft. beds. The folder describes many other modern features, including unusual ease of operation.

The Monarch Machine Tool Co.

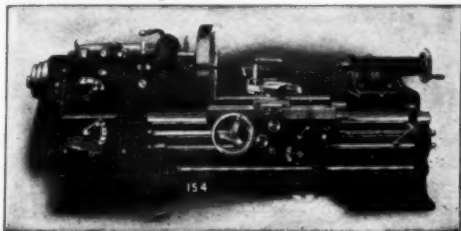
Sidney, Ohio, U. S. A.

Cincinnati Lathes

have demonstrated over 20 years in shops everywhere to give longest satisfactory service. Seldom you find them offered in second hand lists.



We furnish our latest lathes either Cone Type as in cut No. 153 or Geared Head type with single pulley belt drive as in cut No. 154 that may be converted over to motor drive at any time after installation. Sizes 16" to 32" furnished with standard or special attachments if required.



Specify Cincinnati Lathes and be sure of the quantity also quality of work you produce.

The Cincinnati Lathe and Tool Co.

3207-3211 North St., Oakley,

Cincinnati, O.

All Levers are Reached from ONE POSITION

THIS feature of the CLEVELAND OPEN SIDE PLANER puts an end to unnecessary motions by the operator. Saves extra steps—conserves his energy—keeps him at high efficiency. The entire driving and operating mechanism is within easy reach. However, this is but one of many features embodied in the modern CLEVELAND design. Send for illustrated folder giving complete information.

The Cleveland Planer Company

Established 1900

3148 Superior Ave.,

Cleveland, Ohio

Over 1100 Installations

**Send
for
Descriptive
Folder**

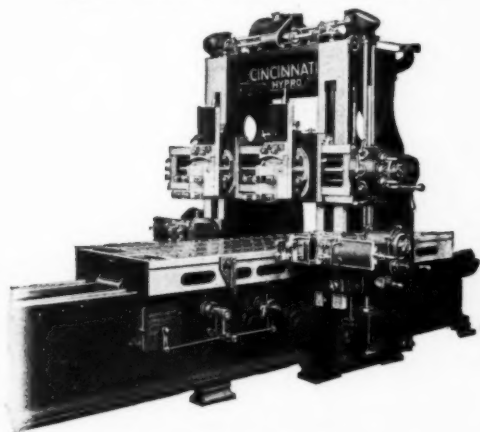


**26 in.
to
72 in.**

**The Open Side Planer with the Column
Base Cast Integral with Its Closed Top Bed.**

High Production Features

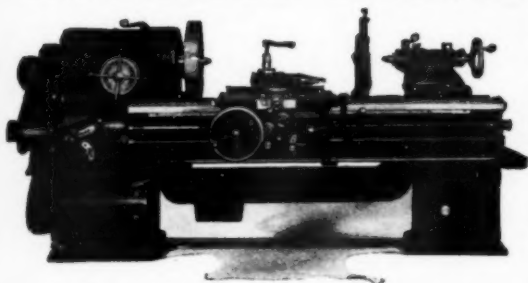
Selective Dial Feed
Rail Clamping Device
Instantaneous Rail Lift
Rapid Power Traverse
Forced Lubrication
Combination Steel
Herring Bone and Spur Gear Drive
Long Inverted Dovetail Down-Slide



The Cincinnati Planer Co.

Cincinnati, Ohio

Monotrol Lathes



The Better Lathe Equipped with

Sykes Continuous Tooth Herringbone Gears
Timken Bearings
One Control for all 8 Speeds
Forced Feed Lubrication

THE Monotrol Lathe features some of the most profitable advantages in modern lathe construction. In addition to the equipment listed above, the Monotrol features a belt, silent-chain or Texrope drive, multiple disc drive clutch and a positive clamp on tailstock spindle. Its speeds may be changed under full power and there is no clash of gears, as all are constantly in mesh. The Monotrol provides the up-to-date shop a unit of equipment that assures increased production and added profits.



*Our Bulletin contains
the full story — May
we send you a copy ?*

The Sidney Machine Tool Co.
SIDNEY, OHIO



TWO STYLES
Three Step Cone and Geared Head

16"x6' New Design **\$525.00**
Weight 1900 lbs.

18"x8' New Design **\$585.00**
Weight 2100 lbs.

3-step cone, double back gear, quick change gear, graduated compound rest, steady rest, lead screw and feed rod, tool post, centers, countershaft and wrenches, ready to run.

A lathe in the **INEXPENSIVE** class, for your shop equal to, in all respects, lathes of much higher price, having all their features:

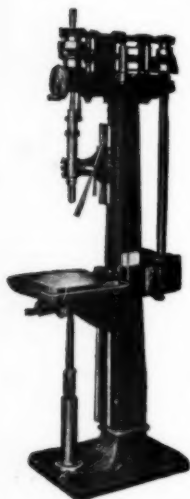
Alignment and Precision
Speed in Production
Ease of Operation
Ability on all Work
Low cost of Upkeep
INEXPENSIVE COST to YOU

Made in 16" and 18" swing from 6' to 18' length of bed. Either 3-step cone belt drive or All Geared 9-Speed Drive Head for 2 H. P. Motor.

*Write us for full information and **PRICES***

The Rahn - Larmon Co.
2943 Spring Grove Ave., **CINCINNATI, OHIO**

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

Made in three
sizes of single
and multiple
spindle models

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

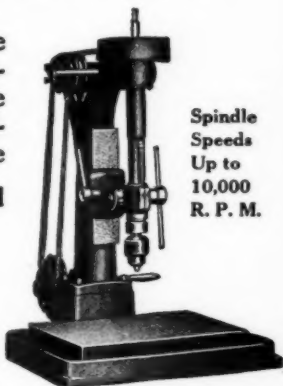
FOOTBURT

Don't Forget—

**Wood, Fibre, Rubber,
Paper, Mica, Bakelite**

as well as the
ordinary met-
als can be
drilled to ad-
vantage on the

**Leland-Gifford
Super-
High-Speed
Ball Bearing
Drilling
Machine**



**Spindle
Speeds
Up to
10,000
R. P. M.**

**Write us about this Drill to speed
up your drilling operations.**

Ask for Bulletin No. 502

Leland-Gifford Company, - Worcester, Mass., U.S.A.

BRANCHES

**BOSTON CHICAGO CLEVELAND
DETROIT NEW YORK
PITTSBURGH ROCHESTER**

AGENTS

**Hendrie & Bokhoff
F. E. Salterlee Company
Colcord-Wright Mch. & Supply Co.
Herberts Machinery & Supply Co.
F. F. Barber Machinery Co.**

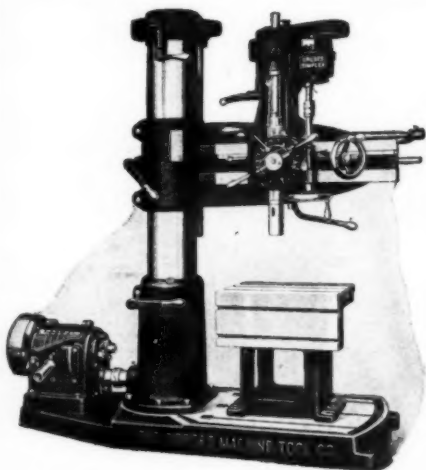
**Denver
Minneapolis
St. Louis
Los Angeles
San Francisco
Toronto**

LELAND - GIFFORD

2½ Ft. - \$1575.

3 Ft. - \$1675.

Dreses Simplex Radials

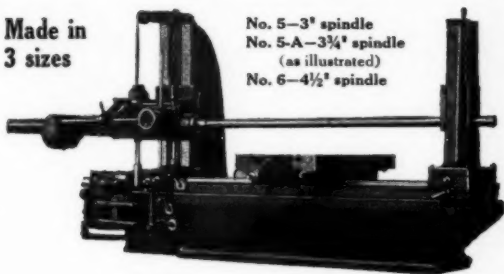


**We also build a complete line
of Multi Duty Ball Bearing
Radial Drills.**

The Dresse Machine Tool Co.
CINCINNATI, OHIO

**Made in
3 sizes**

No. 5—3" spindle
No. 5-A—3¼" spindle
(as illustrated)
No. 6—4½" spindle



Defiance No. 5-A Horizontal Boring, Milling, Drilling and Tapping Machine

Defiance machines are made to meet every requirement of machine tool users. Their abundance of power and ease of manipulation insures speedy and accurate production in both single and manufacturing operations.

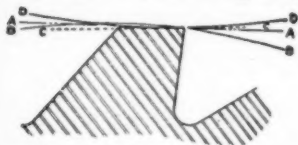
Speed, power and precision are obtained by simplified design and unusual accessibility, which are only two of the many features which add to their dependability under continued hard usage and their ability to do MORE and BETTER work.

Write for the descriptive folder, or for the complete Catalog of "The Defiance Line" of Cylinder Boring Machines, Heavy Service Drilling Machines, Rail Drills, Horizontal and Vertical Multiple Drilling Machines, Multiple Tapping Machines and Valve Grinding Machines.

The Defiance Machine Works
Defiance, Ohio

**Designers and Builders of Precision-Production Machine Tools and
Special Woodworking Machinery**

Cutting tools last longer—cut better—when properly ground



DD represents periphery of grinding wheel, BB circumference of cutter, AA desired clearance as obtained with cup wheel on Ohio Grinder, CC clearance angle obtained using periphery of grinding wheel for clearance.

OHIO Grinders preserve cutter life by correct grinding

MANY cutters pass their stage of usefulness prematurely due to incorrect grinding but proper grinding costs no more than any other.

Ohio Grinders produce a solid backed cutting edge that has double the life of any hollow one.



No. 2 Ohio Universal and Tool Grinder, Belt Driven, Forced Feed Table Lubrication.

The added life given to cutters is actually a saving in cutter investment. These small savings mount rapidly and soon pay for your machine.

It's just as easy to make your tools do more work for less cost, even though the initial investment may be a trifle more.

The sketch above shows the difference between right and wrong grinding of face mills.

You can get a complete story on tool grinding from our booklet "E."

Write for your copy today.

The Oesterlein Machine Co.
3317 Colerain Ave., Cincinnati, Ohio

Grand Rapids No. 1½ Universal Cutter and Tool Grinder



Newly designed to meet the demand for a high grade machine of medium capacity at a moderate price. It has the sterling qualities that are built into all Grand Rapids Grinders, including exceptional ease of handling—and it sharpens tools right.

Our "Universal Cutter and Tool Grinder" folder, which is yours for the asking, pictures this modern machine in the following grinding operations:—face mill, form cutter, angle cutter, surface, gear cutter, reamer, end mill, spiral and plain milling cutter, internal and cylindrical. It also illustrates Grand Rapids No. 2 Universal Cutter, Tool and Drill Grinder, and Nos. 3, 4 and 5 Universal Cutter and Tool Grinders.

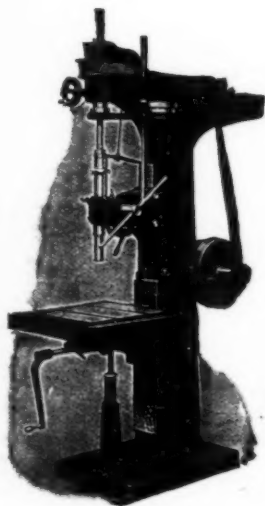
Don't fail to write for folder; it's interesting

Gallmeyer & Livingston Co.

342 Straight Ave., S. W.,

Grand Rapids, Mich.

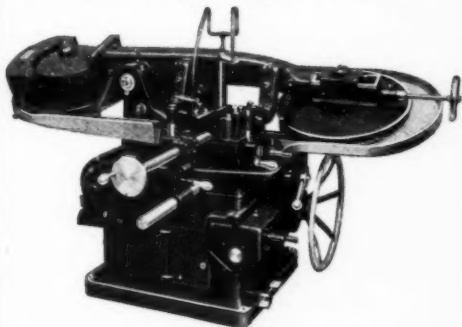
The *Avey*



**Makes
Big Jobs
Look
Small**

The Avey Drilling Machine Co.
CINCINNATI, OHIO

Does Accurate Cutting Off Mean Anything To You?



How much material wasted?

if you have $\frac{1}{4}$ " waste in cutting $1\frac{1}{2}$ " wide discs you waste about one-sixth of your bar.

How much time lost in truing up?

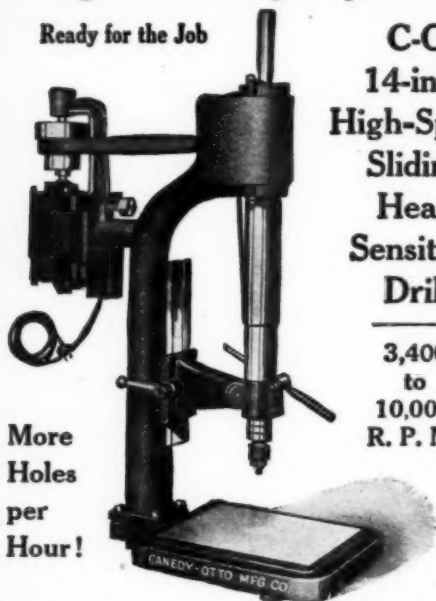
Think of the work of truing up both sides of 110 pieces cut from one 16 ft. bar to straighten up that $\frac{1}{4}$ " inaccurate cut.

*Let us send you circular of the
AVEY MILBAND CUTTING OFF MACHINE*

The Avey Drilling Machine Co.
CINCINNATI

Designed for High Speed Work

Ready for the Job



**More
Holes
per
Hour!**

**C-O
14-inch
High-Speed
Sliding
Head
Sensitive
Drill**

**3,400
to
10,000
R. P. M.**

Total height, 41".
Vertical adjustment of head, 7½".
Diameter of spindle, ¾".
Travel of spindle, 3¼".
Maximum distance of bottom of chuck
to base table, 10¾".
Size of base table, 9½" x 12½".

Speed of spindle, 3,400-5,600-10,000.
Largest size of drill, 5/16".
Distance from column to center of sp. 7¼".
Size of sp. pulley, 1½"-2¼"-3" x 1¼" face.
Bench space, 15" x 20".
Net weight, 180 pounds.
Crated weight, 220 pounds.

Complete Information gladly furnished

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

**New York Branch
407 Broome St.**

**Complete stock
carried at branches**

**San Francisco Branch
955 Folsom St.**

The Improved Canedy-Otto No. 29

Ready for the Job



3 Spindle Speeds
720-1430-3000 R. P. M.

Completely
Motorized—
Also Furnished
Belt Driven

The Improved Canedy-Otto Sensitive Bench Drill comes complete with toggle switch, cord, socket, 1½" endless leather belt, and chuck. The motor is adjusted on a sliding base that maintains the proper tension on the belt at all times, and cuts lost motion and vibration to the minimum. Now equipped with a 3-step cone pulley which gives three spindle speeds of 720, 1430 and 3000 R. P. M. Complete information, with close price, upon request.

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock
carried at branches

San Francisco Branch
955 Folsom St.

This Drill Increased Production and Wages — and Saved \$476.23 Per Year



A prominent valve manufacturer found, after a thorough trial of CLE-FORGE High Speed Drills, that the drills had accomplished three things for him:

1. They increased hole production per hole and per drill;
2. They reduced drill, machine and labor cost by 17%;
3. And, permitted the drill press operator to earn 14½% more money.

CLE-FORGE High Speed Drills effected in this plant a net saving of \$476.23 per year. This saving amounted to about *five times the original cost of the drills used!*

Full details of this interesting performance are contained in an eight page typewritten survey which makes interesting reading. We shall be glad to send you this survey upon request. Simply ask for Survey No. 58.

The CLEVELAND CLEVELAND **TWIST DRILL COMPANY**
CLEVELAND
NEW YORK · CHICAGO · LONDON
SAN FRANCISCO

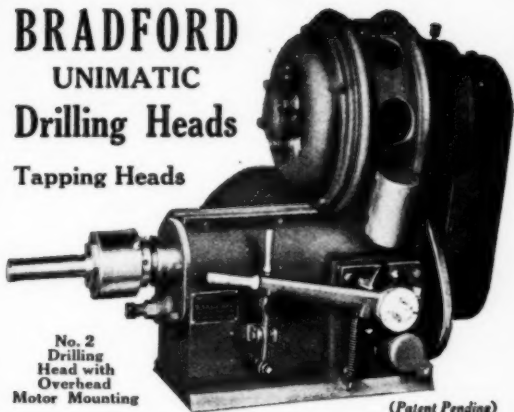
TRADE MARK REG. U. S. PAT. OFF. AND FOREIGN COUNTRIES

BRADFORD

UNIMATIC

Drilling Heads

Tapping Heads



No. 2
Drilling
Head with
Overhead
Motor Mounting

(Patent Pending)

TO meet the present-day high production requirements of drilling, reaming, hollow milling, countersinking, tapping, etc., these Bradford Unit Type Heads were designed for the express purpose of assembling one or more heads into one unit, mounted *at any angle* from *horizontal to vertical*. Workmanship and material employed are of the highest grade.



No. 2 Drilling Head
with Endwise
Motor Mounting.

Capacity of Drill Heads with 3" or 6" stroke, $\frac{1}{4}$ " to $\frac{1}{8}$ " in steel.

Capacity of Tapping Heads with 3" or 6" stroke, 0 to 1" in steel.

Spindle Speeds, from 75 to 2000 r. p. m.

Send for the Illustrated Bulletin

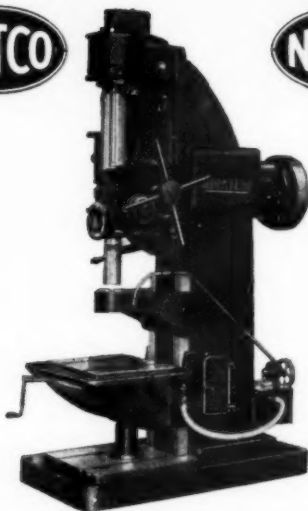
Also ask for information regarding **BRADFORD LATHES**
—made in sizes from 14" to
48" inclusive.

The Bradford Machine Tool Co.

Precision Lathe Builders Since 1840

657-671 Evans Street,

Cincinnati, Ohio



No. 3 Hi-Duty Single Spindle

A single spindle Hi-Duty Drilling Machine that is capable of meeting the requirements of modern machine shop practice. Machine shown above has a capacity of one $3\frac{1}{4}$ " drill in steel. NATCO also manufactures similar drills of different capacities which have a wide range of feeds and speeds making them suited for a wide range of work.

NATCO Products

**Standard Adj. Multiple
Fixed Center Multiple
Single Purpose Auto.
Hi-Duty Single Spindle
Horizontal Duplex**

Drillers-Tappers

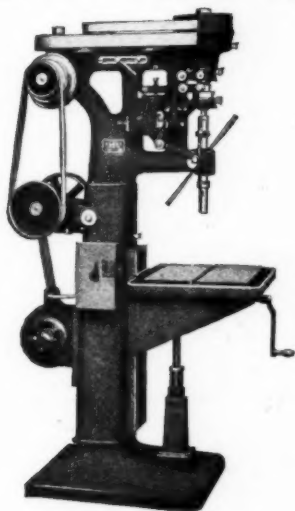
**Drill Heads
Universal Joints
Quick Change Holders
Rotary Tables
Fixtures**

The National Automatic Tool Co.

Richmond, Indiana

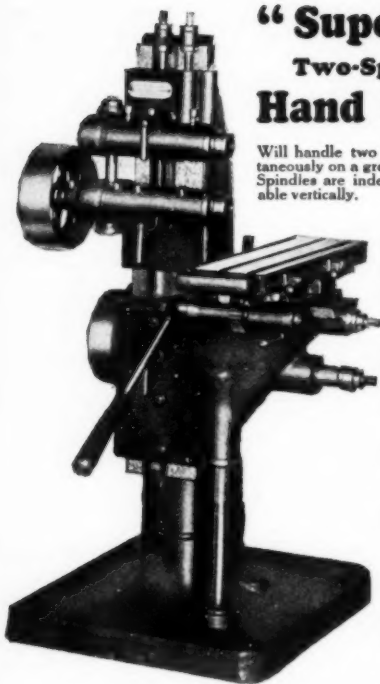
HAMMOND

Drilling and Tapping Machines



Write for Circular

The Hammond Mfg. Co.
7808 Kinsman Road, Cleveland, Ohio



“Superior” Two-Spindle Hand Miller

Will handle two operations simultaneously on a great variety of work. Spindles are independently adjustable vertically.

Slides move freely without cramping, since all guiding surfaces are long in proportion to their width. All sliding members are fitted with adjustable gibs, and can be securely clamped without disturbing adjustment.

Especially adapted to cut step-cut piston rings, as it will handle both sides at once; also for splitting crankshafts and connecting rod bearings, both sides of which are also handled at once. Many “Superiors” are at work on such operations.

One plant already uses fifty

of these machines—not to mention the wide use to which they are being put in a large number of plants. Furnished for direct drive from main shaft. (friction countershaft built integral with machine) or for motor drive.

Descriptive Literature Gladly Sent on Request

We are also Designers and Manufacturers of Special Machinery, Tools, Dies, etc., as well as of Experimental and Model Work.

Superior Machine & Engineering Co.

1920 Ferry Park

1-1

1-1

Detroit, Mich.

Illinois Plain and Surface Grinder



No. 10

This machine has been designed to meet the popular demand for those wanting a general purpose grinder. One end is arranged for surface grinding and the other end for tool or plain grinding.

Special Features

Base: Box type construction, with liberal bearing space for knee, insuring accuracy.

Knee: Supported by elevating screw having ball thrust bearing. Hand wheel graduated in thousandths, long bearing on column.

Spindle: Made of High Carbon Steel, heat treated, runs in 4 Timken tapered roller bearings, adjustment collars to each bearing. Bronze bearings furnished, if desired.

Countershaft: Ball bearing with tight and loose pulley and belt shifting device.

Lubrication: Alemite system for spindle and countershaft.

Write for Complete Specifications and Prices

Illinois Machine & Mfg. Co.
LaSalle, Illinois

BATH Universal Grinders

SELF CONTAINED



10"x25"

12"x36"

also

**Plain Cylindrical, Valve Seat
and Tappet Grinders**

Fitchburg Grinding Machine Corp.

Fitchburg, Mass., U. S. A.

Save Time!



TAKE~ ABOUT Grinder

As used by the Monarch Machine Tool Co., Sidney, Ohio, for grinding and polishing cast iron carriages. They find the TAKE-ABOUT saves time and money, besides giving a high finish. Work faces the operator. No costly set-ups with the TAKE-ABOUT—just bring the machine to the work. High polish is assured by smooth, even action of the belt. Other features you should know about.

Write for interesting bulletin

Porter-Cable Machine Co.

Salina Street

1:1

1:1

SYRACUSE, N. Y.

Expensive Hand Filing and Sawing Are Economically Eliminated

You can save
many dollars
wasted the old way



Type
1-AP

with a
J. & B.
Filing
and
Sawing
Machine

For a small investment you can increase your filing and sawing operations as much as two and a half times. The J. & B. increases accuracy of work, in the hands of both veteran and apprentice.

The J. & B. soon pays for itself many times over — thus making the old method of filing and sawing by hand a rank extravagance.

Write for complete details NOW!

LaPorte Machine & Tool Co., Inc.
LaPorte, Indiana

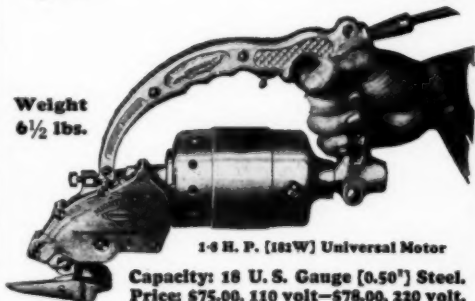
**\$1.00 Saved Per Day Means
\$300. Per Year**

**Follow The Tool Economy of
Over 6000 Unishear Users**

Unishear Cuts Your Cutting Cost in Half

THE MIGHTY MIDGET

**Weight
6½ lbs.**



1-4 H. P. (181W) Universal Motor

**Capacity: 16 U. S. Gauge (0.50") Steel.
Price: \$75.00, 110 volt—\$78.00, 220 volt.**

*A MIDGET in size — a GIANT in power. Built with the
precision of a watch and the ruggedness of a Pile Driver.
Easier to handle than a pair of snips.*

The  Line

*Includes many other models in heavier machines for cutting sheets up
to ¼" boiler plate, all built on the famous Unishear principle.*

Complete Catalog sent on request.

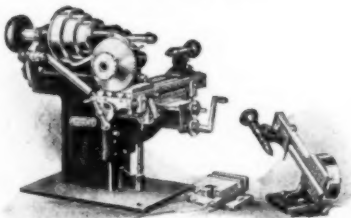
The UNISHEAR CO., Inc.

Main Office & Factory, New York, N. Y., 270 Lafayette St.

HARDINGE

Milling Economy!

With New Conveniences and a Wide
Range of Feeds, This Miller Affords
You Real Savings



Cataract Bench Milling Machine

MANY YEARS of practical experience taught the designers and builders of this Bench Miller just what ought to go into a machine of this sort. You will find it unusually useful, doing its work with precision accuracy, and having available a wide range of feeds for practically all jobs that come within its range.

*Complete data and the interesting
price gladly sent you on request*

Hardinge Brothers Inc.
4149 Ravenswood Ave.
Chicago, Ill.

PEERLESS SURFACING MACHINES

for
**Grinding and Finishing
Flat Work**

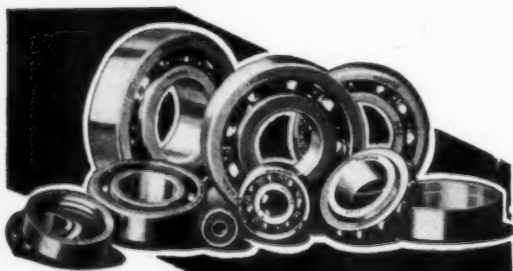
**4' Bench
Model**



**Larger Machines in Both
Horizontal and Vertical Styles**

SEND FOR FOLDER

PEERLESS SURFACING MACHINE CO., Inc.
TROY, N. Y.



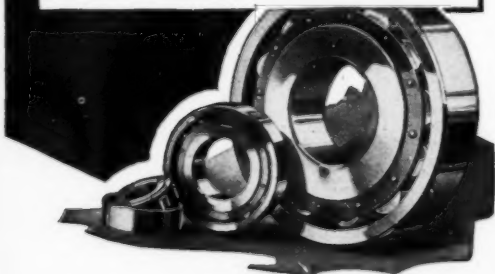
NORMA-HOFFMANN

PRECISION Ball and Roller Bearings,
built to meet the exacting require-
ments of those with whom depend-
able bearing performance is the one
conclusive measure of bearing value.

Catalogs 904, 905, and 917

Norma-Hoffmann Bearings Corp'n.
Stamford, Conn., U. S. A.

PRECISION BEARINGS



Satisfaction Guaranteed

*If you are not fully
satisfied with any
tool bought from
us, RETURN IT
within ten days and
full credit will be
given.*

The Improved E-Z Set Boring Tool

Made in 3 Sizes

Compact, Simple in construction. Positive in adjustment. Lasts indefinitely. The Shank, being a separate unit, is instantly adaptable to any machine.

Send for Circular

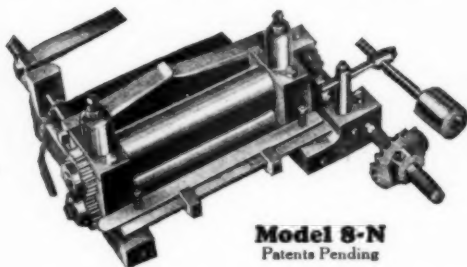
**The
Maxwell Products
Company**

**Ottawa & Indiana Ave.,
Cleveland, Ohio**



Automatic Reversible ROLL FEED

For Any Punch Press



A universal, flexible feed, for automatically feeding Metal, Paper, Leather, Brake Lining, or any stock from coils—from wire to 8" widths and lengths of 0" to 36" at each stroke of the press at rated catalog speed or faster.

This feed mounts on either right or left side of the Bolster Plate, either as a Push or Pull feed. May also be mounted in tandem, one on the right and one on the left as a Push-Pull feed for paper or light stock.

The drive is by chain from a sprocket on the crank shaft, using any sprocket ratio desired.

PRICE \$195.00 F. O. B. Chicago

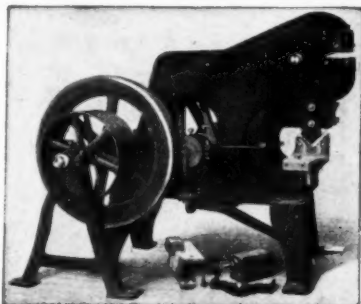
Wittek Manufacturing Co.

DEPT. 3

2532 So. Kedzie Ave.,

Chicago, Ill.

BELOIT



Combined Power Punch and Shear

Built in seven sizes. Nos. 51, 52, 53, 54, 55, 55½ and 56

Direct connected motor or belt drive

THE best all-around punch and shear in a combined machine of moderate cost. Really three machines in one, for it combines the single end punch with the alligator shear for flat bars, and the round cutters for round bars—*and all for the price of one single end machine!*

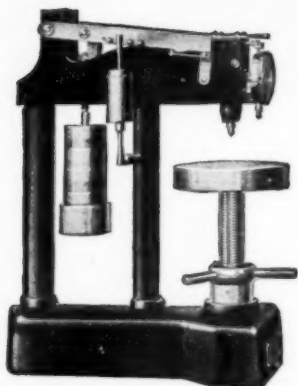
HEAVY, substantial, amply back geared to require the minimum amount of power, compact, easy to operate. Can be equipped with angle shearing attachment, angle notching and coping attachments if desired.

Write Today for Catalog and Prices

Hendley & Whittemore Co.

100 S. State St., BELOIT, WIS.

PUNCHES—SHEARS—BENDING ROLLS



Rockwell Hardness Testing At Jones & Lamson Machine Co.

"We find that a ROUGH GRINDING OF THE SURFACE SUFFICES, the operator giving the under side of the work a brush across a piece of fine emery cloth before placing on the anvil of the machine. Practically NO TIME IS LOST by the machine as the hardness is registered by the time the operator has the next piece ready to place on the anvil.

While we have a LARGE VARIETY OF WORK, it so happens that most of our small parts can be tested without special anvils or fixtures of any sort except a jack for supporting the ends of large pieces."

"Jones & Lamson Machine Co.
E. N. Brookings, Metallurgist"

Since the above was written J. & L. have bought another Rockwell.

Have you your 2nd Rockwell yet?

WILSON-MAEULEN CO
INCORPORATED

735 East 143rd Street,

New York



Versatile — as a Chameleon!

THE chameleon is famous for its "quick changes." And accuracy—have you ever seen it miss a fly?

The RHODES Shaper and Slotter

IS versatile too, and noted for its quick changes. It will do keyseating, shaping, slotting, die making and intricate work of many kinds—often with *one set-up of the work*. When a change is necessary, a few turns of a wrench does the job. Accuracy is guaranteed.

WRITE FOR CATALOG H22

The Rhodes Mfg. Company
944 Park Road, Hartford, Conn.

A
SMALL
Machine
with a
LARGE
Capacity
for
WORK



7 in.
Shaper
Stroke

3½ in.
Slotter
Stroke

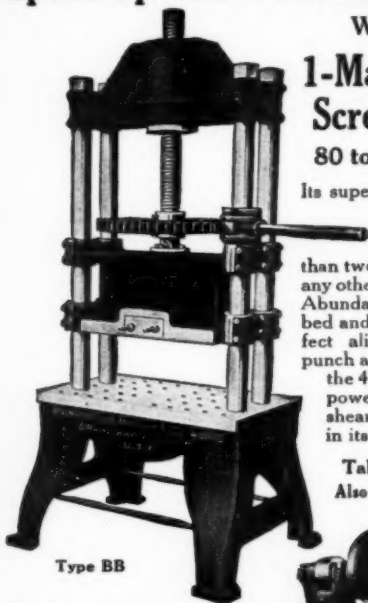
SHAPERS—RHODES—SLOTTERS

Speed Up Your Tool Room Work

With This

1-Man 4-Post Screw Press

80 tons pressure



Type BB

Its superior convenience makes it possible for one man to fit more dies than two men can do on any other type of machine. Abundant room between bed and ram insure perfect alignment of the punch and die. Each of the 4 sizes is rigid, and powerful enough to shear in any die within its dimensions.

Table 20"x36"
Also 3 smaller sizes

Surface Grinder

Is accurate and powerful—runs without chatter. Both feeds have graduated dials. Equipped with latest improvements.

Details and price on request

**JARECKI MACHINE
AND TOOL CO.**

Department A

GRAND RAPIDS,

MICHIGAN



KRW Hydraulic and Sensitive ARBOR PRESS

Now Sold Direct To User
At Greatly Reduced Prices

\$115⁰⁰ F. O. B.
Factory

COMPLETE With All
Attachments as shown

The latest improved combination KRW Hydraulic and sensitive Arbor Press incorporates many new improvements, not found in any other Arbor Press, at any price.

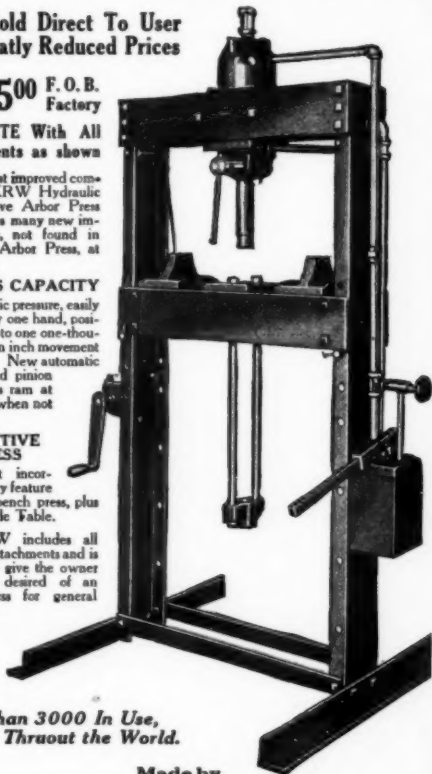
35 TONS CAPACITY

By hydraulic pressure, easily operated by one hand, positive control to one one-thousandth of an inch movement of the ram. New automatic air vent and pinion brake holds ram at any height when not in use.

SENSITIVE PRESS

Attachment incorporates every feature of a 3 ton bench press, plus—Adjustable Table.

The KRW includes all necessary attachments and is designed to give the owner everything desired of an Arbor Press for general garage use.

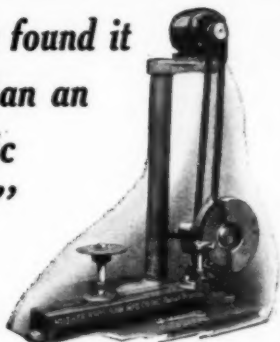


**More Than 3000 In Use,
Thruout the World.**

Made by

K. R. WILSON, 10-14 Lock St., BUFFALO, N. Y., U.S.A.

***"We have found it
faster than an
automatic
machine"***



We offer the No. 2 Metal Cutting Saw Sharpener as a universal saw tooth grinder for shops and plants where the expense of installing an automatic unit is not warranted. It is so simple in operation and set up that with an average operator we have found it faster than an automatic machine.

It handles coarse and fine pitch metal cutting saws, inserted tooth and solid milling saws alternate bevel and straight teeth with equal efficiency. Its range with or without index is from 6" to 40" dia. *Furnished with or without motor drive.*

Huther Bros. Saw Mfg. Co., Inc.
Rochester, N. Y., U. S. A.

Send for details of the Marvel No. 8—ask us to tell you who uses it!

Get catalog of other Marvel equipment and our new high-speed-edge hack saw blade.

The Marvel Metal Band Saw No. 8



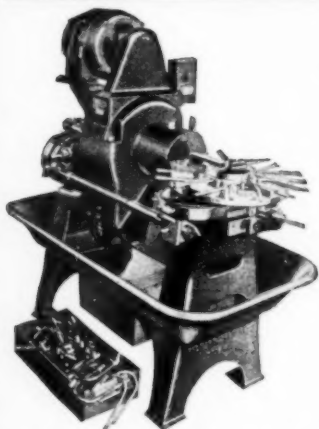
Investigate and Know—

why many well known plants are so completely satisfied with results obtained on the Marvel Metal Band Saw No. 8.

Among other advantages it offers ball bearing band wheels, ball bearing blade guide rollers, ball bearing blade frame carriage, big roomy bed or work table, three cutting speeds, a pump for projecting cutting compound—increasing blade life—a cut stop that can be set at any point desired, NEW adjustable blade pressure that indicates the feed pressure on the blade in POUNDS, and the ability to cut at any angle to 45°. Capacity up to and including 18".

Armstrong-Blum Mfg. Co.
341 N. Francisco Ave.,
CHICAGO, ILL.

"Thread It Separately"



**Save Your
High-Priced
Automatics
for their
regular
work—Do
Your
Threading
on the
Single
Purpose**

RICKERT-SHAFER Automatic Threading Machine

HIGH-PRICED automatics should be kept on their own type of work if you want them to pay profits. Don't saddle them down with threading—the longest operation on most jobs. Instead, use R-S Second Operation Machines—simple, low-priced and versatile—and watch the increase in production and decrease in costs!

THE R-S Threading Machine is the only automatic threader which meets the exacting demands of accuracy among automobile manufacturers. It will do practically every job of threading, from the simplest to the most complicated. Combination tools can be supplied so that chamfering, reaming, facing, etc., can be done simultaneously with the threading and with but one chucking.

Write for Descriptive Folder and Prices

RICKERT-SHAFER CO., Erie, Pa.

GATERMAN

No. 10 Heavy Duty Pneumatic Oscillating Tapping Machine

Also recommended for Multiple Head Tapping

The pneumatic control valve is operated from the spindle feed lever shaft, and requires no attention on the part of the operator. Air pressure required is 30 pounds, and the air consumption is small.



Send samples or blue print. Our engineering department will be pleased to quote guaranteed production estimates and prices.

For lighter Tapping Equipment write for literature "LET AIR DO IT."

W. GATERMAN MFG. CO., Manitowoc, Wis., U.S.A.



MACHINE TOOL AND GENERAL
PURPOSE PUMP



VOLUME PUMPS

MOTOR DRIVEN UNITS
 $\frac{1}{2}$ to 5 H. P. 5 to 75 G. P. M.

FULFLO delivers coolant in volumes which promote efficiency in cutting tools.

The full, copious flow from the Fulflo is needed to make the best tool, with the best coolant, most effective,

FULFLO does not clog, therefore it always

works. It's the trouble proof pump.

No machines stopped to unclog pump. All the chips you can get into it pass through without harm.

FULFLO has longest life because its only pumping part does not wear.

MANUFACTURED BY

FULFLO SPECIALTIES CO., BLANCHESTER, OHIO

GUSHER Pumps

For—

Efficiency

Durability

Reliability



Model T-L-O

Simplicity of construction insures—

efficiency of operation by eliminating all foot and relief valves.

durability because grit, dirt and small chips pass through without injuring the mechanism.

reliability by giving instant lubrication without the need of priming.

*Write for complete Catalog of "Gushers,"
with facilities from 12 to 75 gallons per minute;
belt or motor drive*

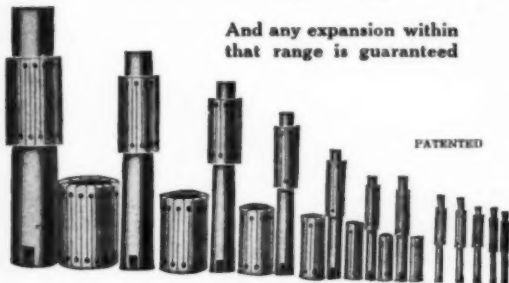
The Ruthman Machinery Co.

528-534 E. Front St.,

CINCINNATI, OHIO

JUST 1 SET OF 12 Champion Expanding Mandrels

Will fill by thousandths any inside
diameter from $\frac{1}{2}$ " to $6\frac{1}{2}$ "



So Simple—only two parts.

So Handy—always ready for any job.

So Efficient—dependable for precision accuracy.

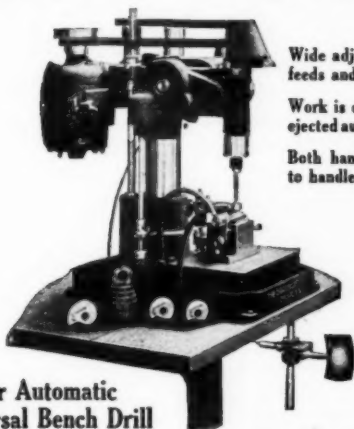
They are suitable for all classes of work, large or small, in all kinds of metal. They hold work of any length of bore and do not chatter. They are lighter, more easily handled, and keep truer than common mandrels. They release work easily. And the grinding of all parts after hardening insures the greatest accuracy. The cost is only about one-fifth that of solid arbors of equal range graduated by sixteenths.

Our Catalog also describes

Champion Tool Holders, Champion Emery Wheel Dressers, Machinists' Vises and Clamps, etc., and our large line of practical, hard-to-beat Shop Furniture. Copy upon request.

The Western Tool & Mfg. Co.
SPRINGFIELD, OHIO

For Large Production Drilling In Small Parts of Varied Shapes



Wide adjustability of feeds and speeds.

Work is clamped and ejected automatically.

Both hands left free to handle work.

Stecher Automatic Universal Bench Drill

The number of holes that can be drilled in a given time on the "Stecher Automatic" is limited only by the capacity of the drill.

The wide adjustability of speeds and feeds; the automatic clamping, releasing and ejection of work; the control of feed by a slight knee pressure, leaving both hands free to handle work—these are some of the features that make the "Stecher" such a remarkable producer at bed-rock cost.

The mere pulling of a lever changes the "Stecher" from an automatic production tool with power feed into a high speed drill press with sensitive hand feed. We can also furnish dial, rotary or magazine feeds to suit conditions.

*Write for folder, which gives the complete description
Also send us samples of your small parts to be drilled*

The Chas. Stecher Co., 2452 N. Greenview Ave.,
CHICAGO, ILLINOIS

**Taylor & Fenn Belt Driven
No. 12 Spring Press**



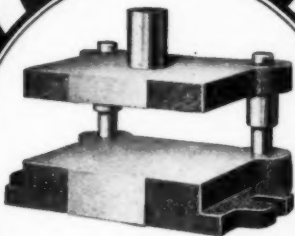
**UNIFORM BLOW
SPRING PRESSES**

**Are made in
three sizes,
with either
single or
double action**

Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of $3\frac{1}{4}$ inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machine after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

**The Taylor & Fenn Co.
Hartford, Conn., U. S. A.**



Danly Die Sets

**Completely Assembled,
Semi-steel; or steel shoe,
semi-steel punch holder.**

Immediate delivery from stock at 20-50%
saving in cost; a set for every need. Over
4000 makers of stampings use them.

Send for new edition of catalog

Danly Machine Specialties, Inc.

2116 So. 52nd Avenue, Chicago, Ill.

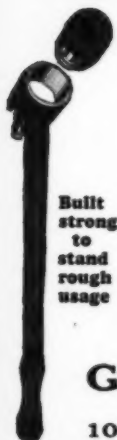
Detroit
Mich.

Long Island City
N. Y.

DANLY
STANDARD



The Quick
Action of
the Favorite
Wrench is
Astonishing



Built
strong
to
stand
rough
usage

The lost motion of the old-fashioned openend wrenches is done away with in the

FAVORITE REVERSIBLE RATCHET WRENCH

because its socket form of head encompasses nut on all sides, no slipping is possible.

Wrench is not removed at every quarter-turn. The FAVORITE cuts the cost of nut turning.

Greene, Tweed & Co.

Sole Manufacturers

109 Duane St.,

New York

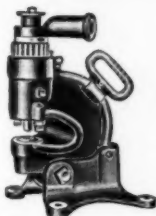
No. 8 Imperial Punch



Operating handles will not become disengaged—Roller bearing—

Capacity $\frac{1}{4}$ " hole through $\frac{1}{4}$ iron.
Made in 3 Sizes: 7, $7\frac{1}{2}$ and 8.
Weight, 16 lbs.

Ball Bearing Punch No. 40



Capacity, $\frac{5}{8}$ " thru $\frac{3}{4}$ " iron.
Weight complete, 87 lbs.

No. 12 Ball Bearing Punch



Capacity $\frac{3}{8}$ " thru $\frac{1}{4}$ ".
Weight 11 lbs.

No. 62 Angle Iron Shear



Capacity $3"x3"x\frac{1}{4}"$ Angle Iron.
Weight 154 lbs.

No. 2 Shear

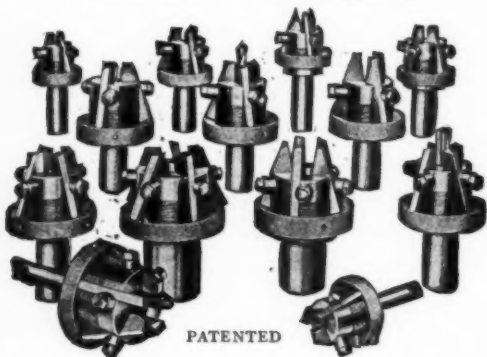


Will shear $\frac{1}{8}"$ Thickness or Lighter
Weight 12 pounds.

Write for Catalog and Price List on Entire Line

WHITNEY METAL TOOL CO.
59 Forbes Street, Rockford, Ill.

Genesee Hollow Mills Are Self-Salvaging



Genesee Hollow Mills have the accuracy and range of usefulness at low cost that make for true tool economy.

Seven sizes cover the entire field from $\frac{1}{8}$ " to 2", and machine all sizes in these limits with unsurpassed accuracy and speed—cutting up to 15" inches a minute in steel.

No matter to what usage you subject "Genesees," they never clog or change in size. Their blades can be ground to any angle, and as they are replaceable, they are self-salvaging and will outlast from 7 to 10 solid tools.

As cost reducers Genesee Hollow Ground Mills have been a revelation to manufacturers everywhere.

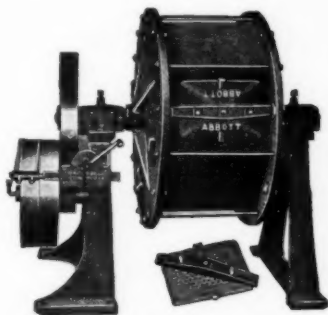
Let us give you detailed information

Genesee Manufacturing Co., Inc.

141 North Water Street, Rochester, N. Y.

Manufacturers of Genesee Rapid Production Tools.

Est. 1908

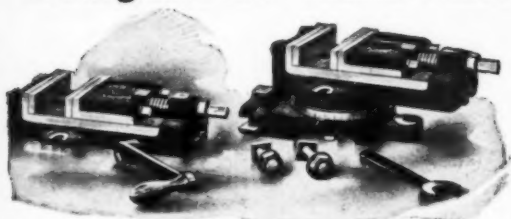


NEEED for constant reduction in finishing has widened the field of ball burnishing unbelievably. Twenty years ago ABBOTT ball burnishing barrels were accepted as the ideal means of finishing small work such as buttons, buckles, etc. To-day improved ABBOTT barrels are producing results on stampings, spun and threaded work, castings and forgings—on safety pins and safety razors.

*Let us submit a burishing analysis
on your work. Send samples.*

The Abbott Ball Company
1043 New Britain Ave., Hartford, Conn.

"Straight Line" Milling Machine Vises

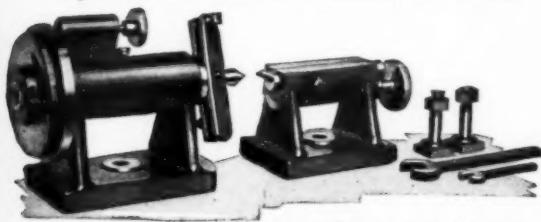


Swivels 180° Either in a Horizontal or Vertical Plane.
STRONG — DURABLE — ACCURATE

Made in Four Sizes

Ordered repeatedly by leading machine tool users for accurate heavy duty milling. Interchangeable parts.

Adjustable Dial Index Center



With work dogged between centers, and latch pin in, the dial can be turned to bring work in position where wanted as to relation with machine cutter or emery wheel, then bound to start indexing from such setting. Regular dial is drilled for three and four stations. Can be used for re-cutting or grinding flutes in taps and reamers or teeth in cutters.

Also Manufacturers Of

Double end horizontal drills, milling machines and attachments, dividing heads, index centers, single and multiple spindle, hand screw machines, cutter grinders, screw slotters, hand lathes, collet chucks, oval chucks, rotary tables, hex-square milling fixtures.

WRITE FOR CATALOG

JOHN B. STEVENS INC.

25 Cleveland Place,

NEW YORK CITY

Pedrick Lathe Boring Bars



There are many times when you could profitably use one of your lathes for boring—if you only had the proper appliances at hand.

We can equip you for such work with one of our Lathe Boring Bars. They are made in diameters from 2½" to 6" and various lengths, with a large assortment of cutterheads to meet miscellaneous requirements.

The lathe provides the power, and each bar has a two-change constant feed, hand-controlled or automatic. The bar is rigidly held and is easily taken down and reset without changing the alignment.

Put your boring problems up to us. We have all kinds of new boring machines, from our Standard Portable Cylinder Boring Bar to our new Floor Boring Machines.

Pedrick Tool & Machine Co.

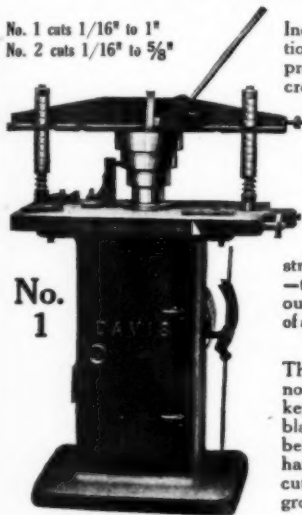
3644 N. Lawrence St., Philadelphia, Pa.

Builders of Portable Cylinder Boring Bars, Crank Pin Turners,
Portable Millers, Pipe Benders, etc.

KWIK Keyseating on a "DAVIS"

**Increase Your Production on
Straight or Mixed Runs**

No. 1 cuts $1/16"$ to $1"$
No. 2 cuts $1/16"$ to $5/8"$



**No.
1**

Increased production means increased profits. You can increase profits on all your work—straight runs or odd jobs—with a Davis Keyseater.

Quickly set up, easy to operate—simple in construction—long life—these are a few outstanding features of a Davis Keyseater.

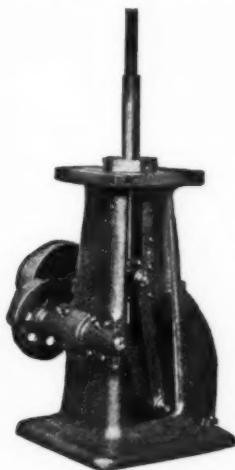
This machine has no equal for cutting keyways in gear blanks, pulleys, bell cranks, crank handles, etc., or for cutting slots for oil grooving, etc.

Made in Two Sizes

*Write for complete information, including
Table of Cutting Time.*

Davis Keyseater Company
255½ Mill Street, Rochester, N. Y., U. S. A.

Rapid CATLIN Keyseaters



*Supreme in
Speed
Capacity
Simplicity*

WHETHER you need one keyseat or a thousand, the Rapid "CATLIN" will cut them to even better than 1000th of an inch accuracy. They are making new shop records right along—helping to speed up production and lower costs.

**There is a CATLIN
to Suit Your Needs**

THE illustration shows our No. 1 Keyseater which has a stroke adjustable to 13" and cuts keyseats from 1/16" to 1 1/2". Belt drive with 3-step cone pulley. Other styles and sizes are made to fit your every requirement. As the Catlin has less than half the number of parts of other keyseaters, the parts can be made extra strong and sturdy without being clumsy.

Used By

**Automobile Plants
Government Shops
Navy Yards
Domestic and
Foreign Factories
and Machine Shops**

*Send for Folder giving Shop
Records and List of Plants
Using the CATLIN*

Chattanooga Machinery Company

2401 Bennett Ave.,

Chattanooga, Tenn.

Luma
ELECTRIC EQUIPMENT CO.
TOLEDO, OHIO

ETCHTOOL

*Guaranteed
fool-proof
and durable.*

*Used on A. C.
light circuit.*



Luma Combination Electric Etching and Demagnetizing Instrument

Easy to use as a lead pencil

A time and labor saving tool that functions equally well permanently marking expensive high speed steel tools and demagnetizing large or small ones.

Always instantly ready without fuss or muss

Operation symbols plainly and permanently marked on tools saves time and spoiled work and speeds production.

Luma Electric Equipment Co.

P. O. Box No. 132 Main Office,

Dept. H.

TOLEDO, OHIO

Etchograph

Trade Mark



Patented July 8, 1918
Patent No. 1,308,160

Cut Tool Marking Time 80%

For marking iron, steel or steelite, nothing can equal the ETCHOGRAPH—the original electric marker. Six stages of heat allow six variations in the size of marking, an advantage no other machine can offer. No acids—no fuss—simple to operate—just connect to light socket and write as with a pencil.

Write for descriptive folder, stating power available.

William Brewster Company
50 Church St., New York

DRILL VISE

With and Without Jig Attachments

Made in Three Sizes, Jaws 6', 9' and 12' Long

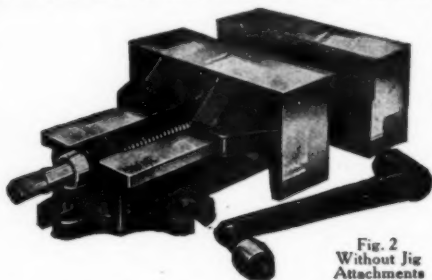


Fig. 2
Without Jig
Attachments

Always a good vise for general shop use on driller, miller, shaper, or planer, and at the same time holds work for duplicate drilling without the cost of a jig.

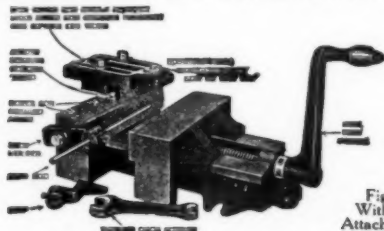


Fig. 1
With Jig
Attachments

Any Vise will pay. More time is lost in catching work than in doing the actual Drilling.

Circulars and Discounts

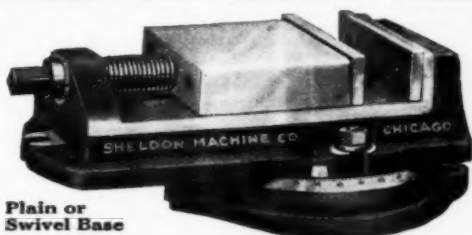
THE GRAHAM MFG. CO.

73 Willard Avenue

PROVIDENCE, R. I.

Great Britain—Richard Lloyd & Co., Ltd., Birmingham
France, Italy, Switzerland, Spain and Holland—Fenwick Freres & Co.
Germany—A. Kayser, Oranienstrasse, 126, Berlin

SHELDON MILLING MACHINES VISES



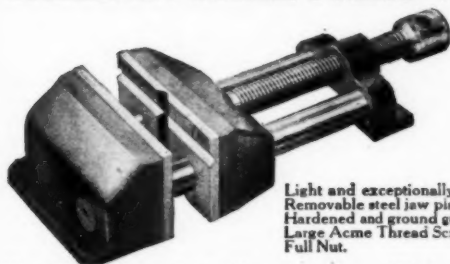
**Plain or
Swivel Base**

The swivel vise is the plain vise with the addition of a circular base, graduated in degrees. It can be removed from the circular base and used as a plain vise if desired.

Specifications and Prices

No.	Width Jaws	Depth Jaws	Jaws Open	Plain Vise		Swivel Vise	
				Weight	Price	Weight	Price
3	3½"	1¾"	2½"	15 lbs.	\$16.00	25 lbs.	\$20.00
4	4½"	1¾"	3½"	30 lbs.	\$20.00	45 lbs.	\$24.00
6	6½"	2"	4½"	70 lbs.	\$30.00	90 lbs.	\$40.00
8	8½"	2½"	6½"	160 lbs.	\$45.00	225 lbs.	\$60.00

SHELDON DRILL PRESS VISE



Light and exceptionally strong.
Removable steel jaw plates.
Hardened and ground guide bars.
Large Acme Thread Screw,
Full Nut.

No.	Width of Jaws	Depth of Jaws	Jaws Open	Weight	Price
D-4	4½"	1½"	4"	15 lbs.	\$12.00
D-6	6½"	1½"	6"	35 lbs.	\$18.00
D-9	9"	2½"	9"	70 lbs.	\$24.00

SHELDON MACHINE CO. 3251 Cottage Grove Ave.,
CHICAGO, ILLINOIS

Grant Rotary Riveter



***Highest Speed
Perfect Uniformity
Lowest Cost***

A Grant Riveter places and finishes one rivet every second it is in operation.

It will finish rivets to the exact degree of tightness or looseness that you desire, and the heads are perfectly formed and highly polished.

The Grant Riveter keeps operating costs at a minimum, and is so simple that unskilled labor can operate it as effectively as can skilled machinists.

Send samples of your riveting work and ask for a catalog

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

Vanderbeek Universal Joints



—represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

Vanderbeek Joints are in daily use on thousands of machines.

*Write today for our
Descriptive Catalog.*

American Tool Works, Inc.
Hartford, Conn., U. S. A.



Type RF-M4 Machine



Strand

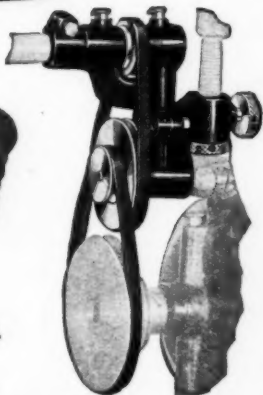
Capacity— $\frac{1}{4}$ H.P.

For

**Rotary Filing
Grinding
And
Polishing**

10,000 R. P. M. Attachment
Furnished Extra
when Required. See
Illustration.

Attachments



N. A. STRAND & CO.

Manufacturers

5001 No. Lincoln Street

CHICAGO

PATENT APPLIED FOR

The NEW HAMILTON



LATHES

are unsurpassed for strength and accuracy. Most convenient heavy duty quick change gear lathes for production and tool room use. Single and double back gear with cone drive. Geared head with belt and motor drive.

Sizes 14'-18'-20'-22' and 24'

Send for new catalogue bulletin

The Hamilton Tool Co., Hamilton, Ohio

DO YOU KNOW
about this NEW C. & J. LATHE?



**15'/16-inch
Geared Head
Motor Drive**

LET US SHOW how it meets MODERN needs

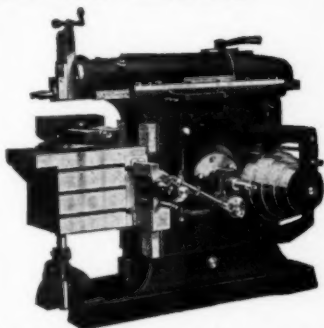
Carroll & Jamieson Machine Tool Co.
Batavia, Ohio

SHAPERS

12", 14", 16"
Plain Crank,
16", 20", 25"
B. G. Crank,
either Cone
Driven or
through Speed
Box.

Belt Shifter
Regular Equip-
ment All Cone
Driven Shapers.

32" Back Gear-
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gle Pulley
Drive.

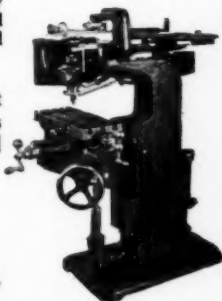


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Universal Die Sinking and Engraving Machines

designed to save time and money
on the production of light and
heavy dies, molds, stamps and
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in brass, steel or cast iron. Built
by a firm having over thirty years
of experience, having equipped
many prominent work-shops.



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All Kinds—Small



The most accurate made and prices reasonable. We carry a complete line of gears in stock for immediate shipment. Can also quote on special gears of all kinds. Send us your inquiries.

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Die Making Machines

save an average of 50%

Dies, templets, experimental parts, gages and the like can be sawed, filed and lapped on the Oliver of Adrian Die Making Machine much easier, more accurately and in a fraction of the time ordinarily required for handwork.

We also manufacture a line of

Point Thinners.

Drillpointers.

Cutter Grinders



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for
Bulletins*

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ALL TYPES:
Spurs, Internals, Bevels,
Mitres, Helicals, Spirals,
Worms, Worm Gears,
Sprockets, Ratchets.

ANY MATERIAL:
Steel, Cast Iron,
Brass, Bronze,
Aluminum, Fibre,
Bakelite, Rawhide.

Made in Small and Medium Sizes, all of One Quality—the very best. We also carry a full line of Stock Gears for immediate delivery. *Write us.*

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Speed Reducers

For every possible requirement for stepping down motor speeds, there's an IXL reducer that exactly fits your needs.

Spur—Worm—Herringbone

Reductions from 2 to 1 up to 50,000 to 1.

Send for 660 page catalog
"Gear Problems."

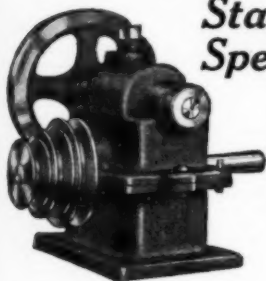


IXL Spur Reducer

FOOTE BROS.
IXL GEAR & MACHINE CO. IXL

229 N. Curtis St., Chicago

STANDARDIZATION PAYS



Type BU-2

Standardized Speed Reducers

For immediate delivery

Send for Catalog giving complete specifications and prices on complete series of Boston Speed Reducers.

Boston Gear Works Sales Co.

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BOSTON GEARS

Fulton STEEL BODY Universal

Scroll



Chucks

AT THE PRICE OF A CAST IRON CHUCK

A one-piece body of solid cast steel. Impossible to break or split. Unconditionally guaranteed.

Send us your trial order without obligation on your part.

All Sizes Always in Stock

UNITED HARDWARE & TOOL CORP., 50-52 Howard Street,
NEW YORK

NEW ROGERS

Segment Grinding Wheel

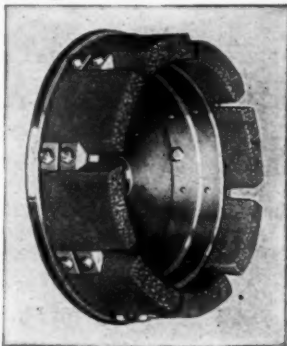
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To facilitate faster grinding we announce a new grinding wheel chuck. The outstanding feature is the simplicity of construction, the chuck being so constructed that it can be used on face or surface grinders of any make. Adjustments for changing segments are very simple.

The chuck is now made in 3 sizes, 12", 14", and 18".

We also make a complete line of light face and knife grinders up to 13" capacity.

SAMUEL C. ROGERS & CO.
211 Dutton Ave., Buffalo, N. Y.



14" Rogers Chuck

Accuracy—Speed—Efficiency

"HOPKINS" 3-Jaw Chuck



"HOPKINS" original design, selected materials and the Dust-Proof feature guarantee continuous production at lowest costs.

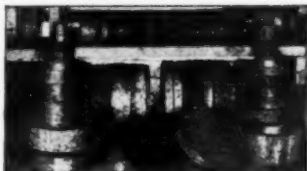
Greater gripping power, lessened vibration and increased centering precision are guaranteed in each "HOPKINS" Chuck.

"HOPKINS" Two and Three Jaw Chucks are made in the following diameters: 8", 10", 12" and 14"—all carried in stock.

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Machine Steel Discs From Stock or Cut to Order!



Phone, wire or write, and your order will be

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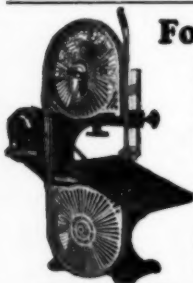
We can supply any size

Machine Steel Discs from 1" to 12" in diameter, one inch and wider and in any quantity from one to a thousand or more. This new service will save you time and money.

Writing us for quotations places you under no obligation

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For Any Cutting Job

You can handle all small cutting jobs in wood and metal to advantage with the Racine Duplex Band Saw.

This is essentially a quality tool. It is accurate to a fine degree and so sturdily built it will last for years.

Write for literature that outlines the work you can do with the Duplex Band Saw.

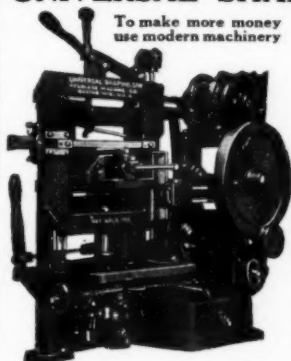
Racine Tool & Machine Co.

1429 Junction Ave., Racine, Wisconsin

RACINE

METAL CUTTING MACHINES

-PEERLESS- UNIVERSAL SHAPING SAW



To make more money
use modern machinery

Different Principles
Greater Efficiency
Give The Most Of—
Speed
Accuracy
Blade Economy

SIZES:

6"x6"--9"x9"--13"x13"

PEERLESS

HIGH SPEED HACK-SAWS

6"x6" 9"x9" 13"x16"

Sturdy--Efficient--Reliable

Peerless Machine Co.

1218 Sixteenth St.

Racine, Wisconsin

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**AUTOMATIC
SMALL PRECISION**

**Gear Hobbers
Gear Cutters
Pinion Hobbers
Thread Millers
Hob Grinders**

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Triplex Machine Tool Corp.

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Sigourney Sensitive Drills

Plain or Ball Bearing
Belt or Motor Drive

WE MANUFACTURE sensitive drills exclusively. They are built for *service*, and in quality are unsurpassed.

SIGOURNEY DRILLS are made with one to four spindles. The illustration shows our one-spindle ball bearing drill. It has vertical adjusting head, adjustable table, three speeds, runs true and is very sensitive. *All parts are interchangeable.* Shipped belted ready for use.

Write for circulars and prices

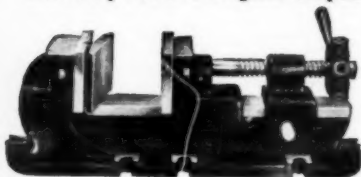
Sigourney Tool Co.

Hartford, Conn., U. S. A.



Gem Drill Press Vise

Holds tapered and irregular shaped pieces firmly



Made in
three
sizes
up to
10½ in.

ITS STRENGTH, capacity, adaptability and quickness of setting make it *the most efficient vise on the market.* Swivel jaw adjusts automatically to odd shaped pieces. Adapted to an unusual variety of drilling and milling operations. A big time saver. Worth more than it costs.

Write for folder, illustrating some of its many uses.

J. E. Martin Tool & Die Works, 528 W. State St.
Springfield, O.



A BIG Saving— In Your Drilling Costs

A U.S. Multiple Spindle Drill Head transforms a single-spindle drill into a multiple spindle.

YOU CAN drill two or more holes with the same speeds and feeds you use for drilling one.

Special Heads Made to Order

THEY ALL have patented double adjustment, which permits drilling in any pattern. *Writing us incurs no obligation.*

The United States Drill Head Co., 1952 W. Sixth St., CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

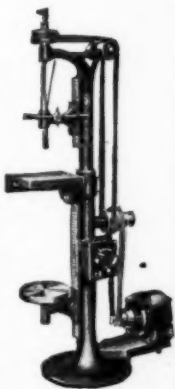
The U. S. — A Complete Motor-Driven 14" Sensitive Floor Drill

Price with motor,
switch and belts - **\$115**

Or with Counter-
shaft for Belt Drive **\$70**

Nothing Better for the quick and accurate drilling of holes $\frac{1}{2}$ " and smaller. Steel spindle, ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds, etc. Send us your order, or ask for more data.

The U.S. Machine Tool Co.
1952 W. 6th St., Cincinnati, Ohio



"BURR" Keyseating Costs Less

No Dismantling—No Fuss



**The BURR
Portable
Keyseater**

Cuts keyways
up to 12" long,
in shafts up to 5"
diam., anywhere,
in any position.

Have one on hand for your next emergency—the cost is often saved on a single job. The seven sizes are *quick and accurate*. Hand or power driven. Over 10,000 in use. *Order yours today and save money!*

JOHN T. BURR & SON

422 Kent Ave., Brooklyn, N. Y.

Remarkable

In

**How Many Places
This Keyseater
Can Be Used**

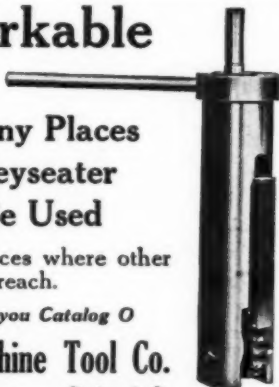
It gets into places where other machines can't reach.

We will send you Catalog O

National Machine Tool Co.

2268 Spring Grove Ave.,

Cincinnati, O.



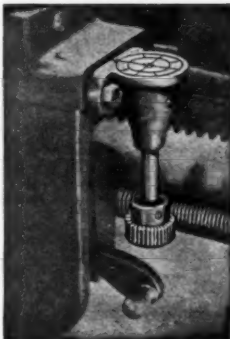
E-Z THREAD DIAL

Thread cutting on engine lathes made easy, and at lower cost.

Made in four sizes.

Can be easily attached to all size lathes. A reliable device that will aid the operator in the work of cutting threads.

With it threads can be cut close up to shoulders as easily as the ordinary thread.



Eliminates stopping or reversing the lathe.

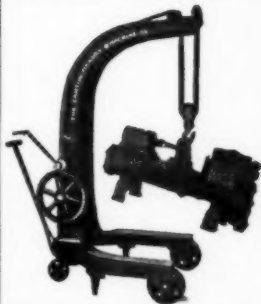
The many repeat orders received prove it is satisfactory after trial.

Can be shipped within two days after receipt of order.

Sent on thirty days' trial. Send for latest folder today.

JAMES M. COLVEN, 20 Wolfe Street, Yonkers, N. Y.

If One Man Could Do It—



If he could do all your loading and unloading—your hoisting and trucking—what a saving in time and labor it would be. And one man can do it if he is furnished with a—

CanTon Portable Truck and Crane

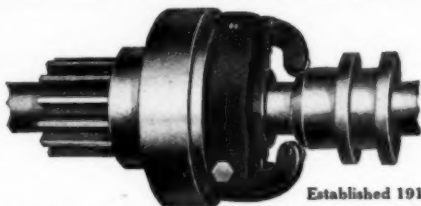
He can raise, truck and place any load up to 6000 lbs. weight. Now CanTons can be equipped with the new *Safety Friction Brake*—a double assurance of safety to the operator and of efficient handling of the load.

*A size for every use
Write for booklet E-8*

CANTON FOUNDRY & MACHINE CO., Canton, Ohio

New York Office: 101 West 31st Street

The Carroll Friction Clutch



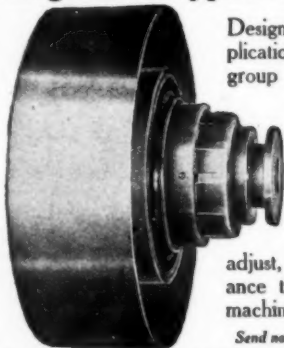
Established 1912

Carroll Clutches are being operated successfully on Lathes, Milling Machines, Gear Tooth Rounders, Bakery Machinery, Conveying Machines, and direct drives to any machine, for the past sixteen years, with very few replacement parts—and their first cost is not high. You owe it yourself to try one. They are guaranteed to satisfy you unconditionally.

Write for prices and dimensions for your particular needs

L. W. Carroll Manufacturing Co.
2046 Ross Ave., Norwood, Cincinnati, Ohio

Edgemont Type E Disc Clutch



Designed for machine applications, high speeds and group drives, but is also adaptable for any other drives where an efficient, powerful clutch is needed. Extremely easy to operate and adjust, with neat appearance to match the best machine tools.

Send now for "Type E" bulletin

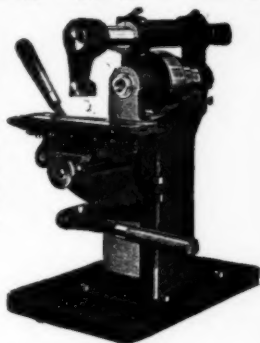
THE EDMONT MACHINE CO., Dayton, Ohio

Our Specialties are Drilling, Tapping and Milling

BURKE

Power and hand feed bench milling machines built in six different sizes. One of these will exactly fit the job you have in mind.

Write for full particulars



The Burke Machine Tool Co., 297 E. 16th St.,
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Over 100 Shapes and Sizes of
Armstrong Tool Holders

SAVE h. s. Steel, 90%; Grinding, 70%; Forging, 100%



STRAIGHT SHANK TURNING TOOL

We also make—all of Armstrong quality—

Ratchet Drills
Drilling Posts
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Lathe Dogs
Clamps
Wrenches
Planer Jacks

Bolt Drivers
Tool Posts
Drill Sleeves
and Sockets

Glad to mail you Catalogs; write for them

Armstrong Bros. Tool Co.

"THE TOOL HOLDER PEOPLE"

308 N. Francisco Ave., Chicago

Bar Stock Racks



They will carry all the Steel that you can pile on them, without danger of arms' bending or tipping over. For bars of 16 feet or longer three posts are required. Each post is a separate unit and can be set any place desired, for it is not necessary to fasten them to the floor. Single arm racks for placing against the wall.

They save time, make a clean shop by getting all the stock off of the floor, even the short lengths. Two 1x6 boards may be placed on the lower arms for the storage of short pieces of stock. Base: Heavy cast iron. Column: Steel channel with angle steel arms bolted on. Arms are adjustable.

Get our Catalog on Factory Equipment

Pollard Bros. Mfg. Co.

4038 N. Tripp Avenue,

CHICAGO, ILL.

PIONEER TRUCK CASTERS



**Will Help Increase and Speed
Up Your Production**

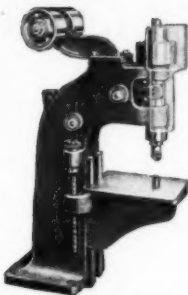
Initial Cost is small—but results are GREAT.

Illustrated Catalog, showing a caster for every industrial purpose, free for the asking.

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Pioneer Caster & Mfg. Co.

ELKHART, INDIANA



For Your Small RIVETING The Linley Rotary RIVET SPINNER

- ☐ Covers a wide field of riveting.
- ☐ Simple in design but—
- ☐ Rigid and powerful.
- ☐ Guaranteed to give satisfaction.

Get the full details before
buying a riveter

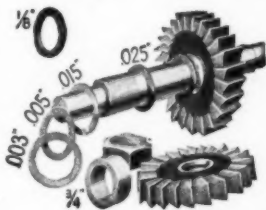
**WE ALSO MANUFACTURE
EQUIPMENT FOR ROTARY
RIVET SPINNING MACHINES**

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Linley Brothers Co., 579 Fairfield Ave.,
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Steel Spacing Washers—

Made of a good grade of Cold Rolled
Strip Steel, also known as Shim Steel



Stock sizes for arbors of
following diameters: $\frac{3}{8}$,
 $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1 , $1\frac{1}{8}$, $1\frac{1}{4}$,
 $1\frac{1}{2}$, $1\frac{3}{4}$, $1\frac{7}{8}$, 2 , $2\frac{1}{4}$,
 $2\frac{1}{2}$, 3 , $3\frac{1}{2}$ and 4 in.
and larger.

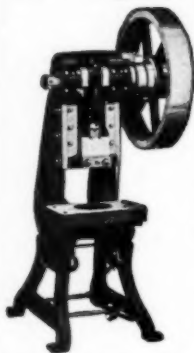
Stock thicknesses: .002,
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.007, .008, .010, .012,
.015, .020, .025, .032,
.047, .063, .093 and
.125 inch.

Other thicknesses up to
3.000" made to order, with
keyways if so ordered.

Ask us to send samples; you'll like them

Detroit Stamping Company
3443 West Fort St., Detroit, Mich.

The Spirit Of the Times



is reflected in the speed and stamina of Rockford High Duty Punch Presses.

They are built to produce and maintain Hi-Production—and they do it.

Wide range of sizes and types.

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Rockford Iron Works
Rockford, Ill.



Punch MORE Holes *with* T. H. L. PUNCHES

T. H. L. Punches will produce more than the average number of holes, for they are made of the highest grade, dependable tool steel and are hardened and tempered—*right*. Our experience of over 35 years in making of punches assures you satisfactory, continuous and profitable production.

A Trial Order

will convince you. We carry large stocks of regular sizes for immediate delivery—special sizes quickly made.

Write for a copy of our catalog

T. H. Lewthwaite Machine Co.
311 East 47th St., (Est. 1890) New York City

Let the HANDNIB, A Combined Shear and Nibbler, WORK FOR YOU.

Save Time! — Save Money!

BE SATISFIED!

We want you to get this "Handnib" and prove to yourself its time and money saving ability. This New, Scientifically designed nibbler does accomplish wonders. You can cut your template and gauge making costs *more than one-half*.

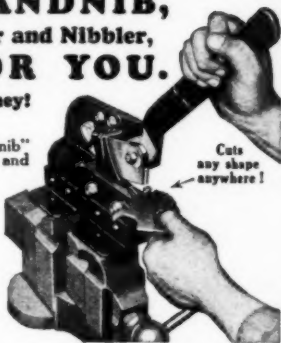
Price, \$32.50

Also manufacturers of the **National Vise Shear**. Absolutely the highest quality slitting shear on the market. **Fits In Any Vise**—designed like the Handnib without nibbling feature.

Price, \$21.50

National Machine Tool Co.

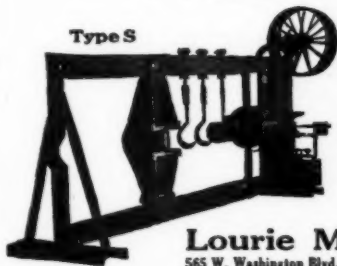
1536B Clark St., Racine, Wisconsin



Special
Blades for
Special
Jobs



Lourie Hydraulic High Speed and Heavy Duty Presses



For
Every
Purpose

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Your Inquiry

Lourie Mfg. Co.

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Made in 6 Sizes for Balancing Anything That Revolves up to 24000 lbs.



Anderson Improved Balancing Ways

Require no leveling or adjustment. They are especially sensitive! Spindles and discs are hardened like the frame—they cannot lose their effectiveness or become injured by use.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight	45	90	150	350	650	
Code	Bend	End	Dis	Job	Ben	

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.
1915 Kishwaukee St., Rockford, Ill.

The Springfield Straightening Press

"The Acme
of
Convenience"



Made in
3 Sizes

Invaluable
in the
tool room,
also for
straightening
crank and
cam shafts
and other
automobile
parts.

A GREAT LABOR SAVER, as you will find the arrangement of this Press makes it the very *acme of convenience*. Any work within the range of centers may be tested and straightened without unnecessary walking from press to lathe each time in straightening rough or finished work. Any length, however, may be operated upon. Of "Springfield Quality" thruout.

Write for folder illustrating many of its uses

The Springfield Machine Tool Company
633 West Southern Avenue, SPRINGFIELD, OHIO
We also manufacture Engine Lathes and Shapers



FEDERAL Dial Indicator Model "30"

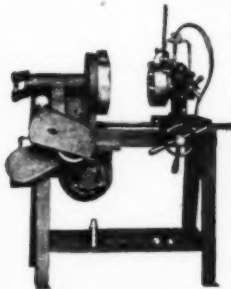
Graduated to read in .0001". As shown in cut, reads 0-5-0 (plus or minus), but can also be furnished with direct reading dial 0-10. Standard range is .020", or two complete revolutions of hand. When used for comparative work, where extreme accuracy is not required, a range of .200" or 20 complete revolutions of hand can be furnished. Other details may be altered to suit your requirements.

*Write for Information on
the entire FEDERAL line*

Federal Products Corporation PROVIDENCE, R. I.

Western Branch: 7338 Woodward Ave., Detroit, Mich.

"SAUNDERS" Portable No. 1 Improved Pipe Threading and Cutting Machine, Motor Driven



A new, rugged built machine recommended where a portable machine on the job or one for permanent installation for all around pipe shop use is required.

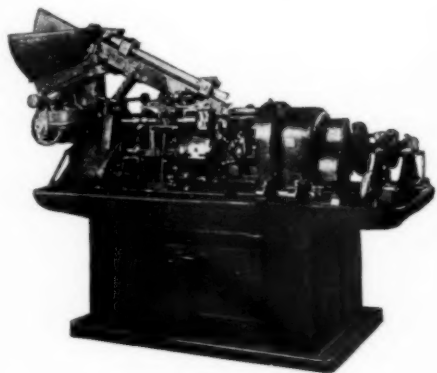
Has 1 h. p. constant speed motor, reversing switch; one adjustable expanding diehead with interchangeable chasers for threading pipe from $\frac{1}{4}$ " to 2" inclusive; rotary oil pump lubrication; reaming and cutting off attachment, and is adaptable for the threading of bolts and use of solid dies.

We also make other machines to meet all conditions for threading from $\frac{1}{4}$ " to 18" inclusive.

Complete Catalog Sent Upon Request

D. Saunders' Sons, Inc.
31 Atherton Street, Yonkers, N. Y.

Combined Automatic Pointing and Threading Machines

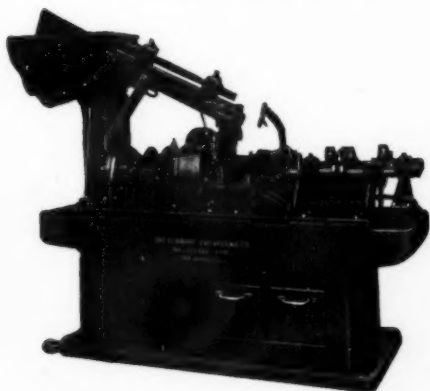


For Bolts and Cap Screws
Capacity— $\frac{3}{16}$ "x1" Diameter
1" to 6" Long

Write for Full

THE ECONOMY ENGINEERING

Automatic Shaving Machines



Shaves top and underneath
head of Cap Screws
Capacity $\frac{1}{4}$ " x $\frac{3}{4}$ " Diameter
 $\frac{3}{4}$ " to $5\frac{1}{2}$ " Long

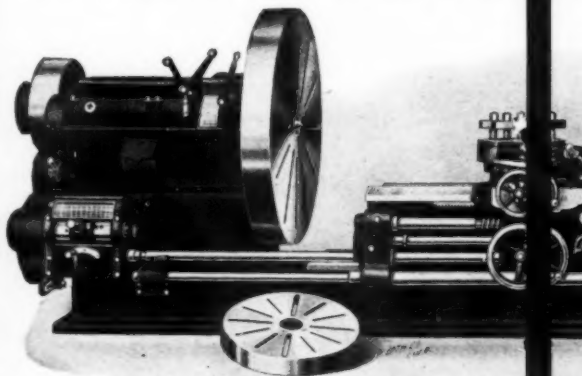
Information

COMPANY, - Willoughby, Ohio

LeBlond Sliding

A Line Of Universal Lathes

This line of lathes has been developed to meet the requirements of a universal lathe of wide adjustable range. They are built in a section of which is adjustable along the lower section to provide a gap and any necessary distance between centers. They are built in those of our regular engine lathes. They are built in a headstock or motor drive. We have complete literature.



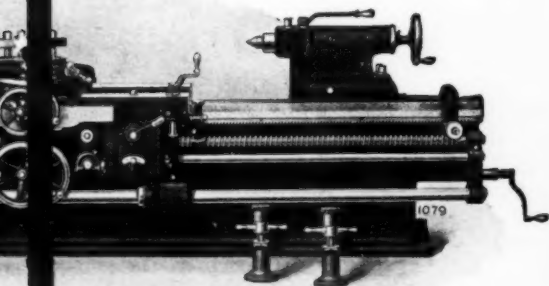
LeBlond 25"-50" Heavy Duty Geared

The R. K. LeBlond Machine Co.
Cincinnati, Ohio

g Bed Gap Lathes

hoses Of Adjustable Capacity

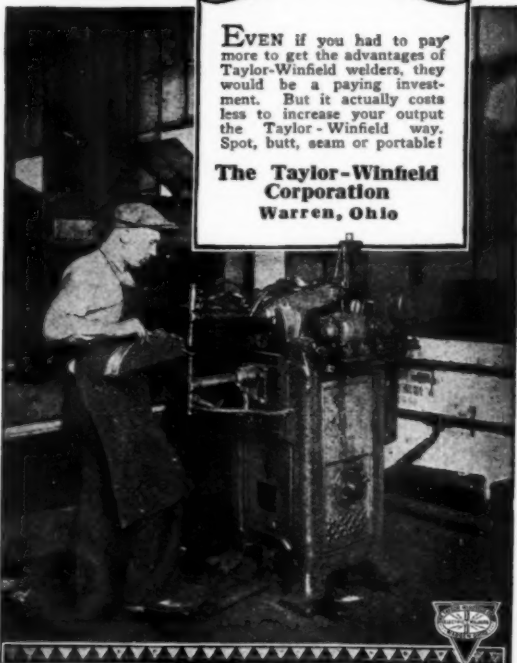
the requirements of jobbing and service shops for a
y 20 e characterized by a sliding double bed, the top
r section, providing an increased swing through the
rs. The other units and features are identical with
uilt in a line of sizes with either cone driven or geared
era ture on these machines now ready for distribution.



Geared Head Sliding Bed Gap Lathe

Machine Tool Company
Franklin, Ohio

TAYLOR-WINFIELD WELDERS



EVEN if you had to pay more to get the advantages of Taylor-Winfield welders, they would be a paying investment. But it actually costs less to increase your output the Taylor - Winfield way. Spot, butt, seam or portable!

**The Taylor-Winfield
Corporation
Warren, Ohio**



Lewis Seam-Welding Head

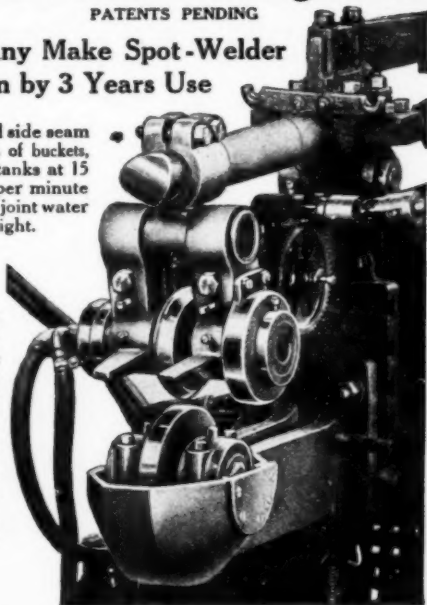
PATENTS PENDING

**Fits Any Make Spot-Welder
Proven by 3 Years Use**

Will weld side seam or bottoms of buckets, pails or tanks at 15 to 25 ft. per minute and make joint water and gas tight.

One user has made over 1½ million 3 inch lap joints and then nickel plated the piece.

You can't find the joint.



No structural change is necessary to your spot welder—simply clamp the Lewis Welding Head to the upper horn. Remove lower horn and bolt on the proper electrode for either transverse or longitudinal welding. Please note the electrode "drive" is a separate unit and NOT attached to spot welder.

Let us send you our bulletin No. 128 which gives interesting information on seam welding in general and *This Proven Seam Welder in Particular.*

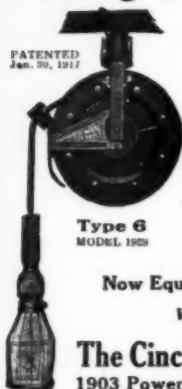
Welding Appliance Co.

2111 West Lake St., Chicago, Ill., U.S.A.

Getting Light on the Subject

is Easy with an
AUTEX Extension Reel

PATENTED
Jan. 30, 1917



Type 6
MODEL 1925

It goes wherever you want or need it. Saves time and eyes, speeds up work and quickly pays for itself. Indispensable during the winter months.

ORDER NOW!

Approved by the Underwriters

Now Equipped with Rubber Covered Cord

Write for descriptive circular

The Cincinnati Specialty Mfg. Co., Inc.
1903 Powers St., Cincinnati, Ohio

MARKING DEVICES

RUBBER STAMPS



STEEL STAMPS



BURNING BRANDS



**ETCHED METAL
NAME PLATES**



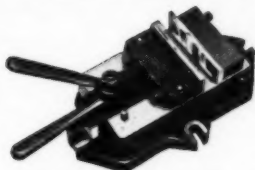
**BRASS
LABELS**



THE SCHWERDTLE STAMP CO.
BRIDGEPORT, CONN.

Speed — Power — Strength — Accuracy

Hartford Milling Vise



Jaw width 5"
 Jaw depth 1 1/4"
 Maximum opening 3 1/2"
 Weight 40 lbs.

Also made in the swivel-jaw type with hard or soft jaws, maximum opening 2 1/4".

The "Hartford" is designed to give the utmost in service. A low cam-faced handle gives required quick opening and return—while a top-eccentric lever-handle furnishes tremendous binding power. You can rely on "Hartford" to survive the hardest usage. Its steel parts are drop-forged, hardened and ground—its base is made of special iron.

Our catalog gives details and describes its many uses

We also Build Machinery on a Contract Basis and Design and Develop Special Automatic Machinery—Gears Cut to Order.

Hartford Special Machinery Co., 285 Homestead Ave., HARTFORD, CONN.

THOMPSON
12"x36"
Universal

**ALL Grinding on
 ONE Machine—**



**Saves
 Time
 and
 Money**

Thoroughly efficient, accurate and dependable. Work adjusts to a fixed grinding wheel — an exclusive feature that's better.

Does all kinds of grinding like a single purpose machine.

Machines are equipped with the new auxiliary coarse cross feed for surface grinding.

**The Thompson
 Grinder Co.**
 1534 West Main St.,
 Springfield, Ohio

Nicholson Expanding Mandrels



A JOB can be placed so it overhangs the jaws on this mandrel, which permits the facing down of the side without the turning tool damaging the mandrel. You cannot do this on a solid mandrel.

Write us for further information and prices

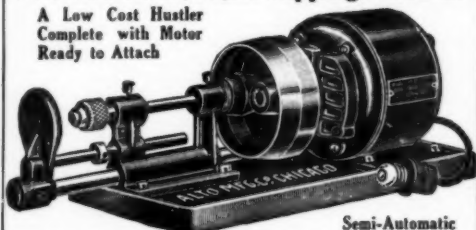
W. H. Nicholson & Co.

117 Oregon St.,

Wilkes-Barre, Pa.

No. 1 ALTO Motor Driven High Speed Tapping Machine

**A Low Cost Hustler
Complete with Motor
Ready to Attach**



Semi-Automatic

Its Main Points are—(1) High speed, with reverse three times as fast; (2), compact and complete, ready to attach to light socket; (3), so simple in construction that we can sell this high-grade tapper at a low price. Capacity, $\frac{3}{16}$ " in brass, $\frac{1}{32}$ " in steel. We also make larger motor driven Tapping Machines.

Write for descriptive circular and moderate price

**The Alto Mfg. Co., 1647-51 Wolfram St.
Chicago, Ill.**



"SCULLY-JONES"

Self-Aligning Reamer Holders

For Screw Machines—Turret Lathes—Drill Presses

COMPENSATES for all irregularities in machine alignment. Reamer can float to one side, at the same time swing on an angle in any direction to align itself with the work.

THESE HOLDERS are made in five standard sizes for reamers up to 3" diameter. Adaptable to any style machine drive or reamer tank.

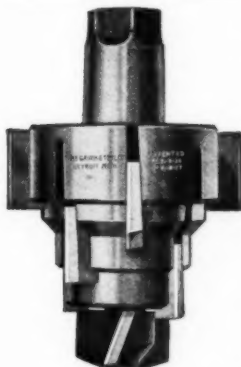
ORDER ONE ON APPROVAL

Get our Small Tool Catalog No. 36 for details

SCULLY-JONES & CO., TOOL DIVISION
1901 S. Rockwell St., CHICAGO, ILL.

Representatives and Local Stocks

CLEVELAND, OHIO, - Cleveland Tool & Supply Co., 1427 W. Sixth St.
DETROIT, MICH., - Gross & Henning, 704 Detroit Savings Bank Bldg.
NEW YORK CITY, - L. C. Bigelow & Co., Inc., 250 W. 54th St.



GAIRING

MULTIPLE - OPERATION

CUTTERS

SOLID

AND

INSERTED BLADE

Our business is the planning and production of end cutting tools upon which we have concentrated our thoughts and efforts for many years.

Our Technical dept. devotes its time exclusively to planning and designing tools to suit your requirements.

Send us your Blue Prints or parts to be machined, we will design and suggest tools to produce holes most economically.

No obligation, merely a willingness to be helpful. Tool Catalog and Engineering Reference mailed on request.

THE GAIRING TOOL COMPANY

1635-37 W. Lafayette Blvd.,

DETROIT, MICH.

Representatives In Principal Cities

Safety — Speed — Strength



(PATENT PENDING)

GREENE QUICKACTING VISE

No. 3-3'
\$6.00

No. 4-4'
\$10.00

No. 6-6'
\$20.00

Instant adjustment—positive grip obtained by use of *Special Screw and Open Nut*, the threads of which are *oppositely undercut*—no sticking—no binding—no stripping of threads. Unbreakable steel back bone for slide. Portable—suitable for bench or machine.

Write for our Special Introductory Offer

Central Distributing Co.

946 Harper Ave.,

Detroit, Mich.

Mail Orders Solicited—Agents Wanted

Bending at a PROFIT

with "*Buffalo*"

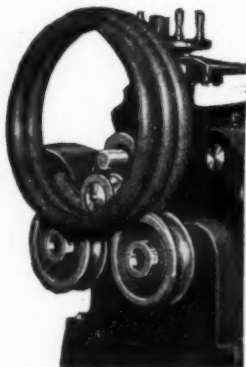
Angles, beams, channels, flats, rounds, squares, tees, pipes and tubing easily bent—WITHOUT ANY HEATING.

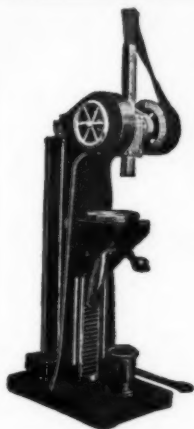
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Buffalo Forge Co.

161 Mortimer St., Buffalo, N. Y.

In Canada: Canadian Blower & Forge Co., Ltd. Kitchener, Ont.





Atlas Arbor Presses

For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

*Write for our Bulletin—
showing 30 different sizes*

Atlas Press Co.

*Department B,
Kalamazoo, Michigan*

Fall River Screw Press



Here is a new screw press which is large enough and strong enough to take care of every job that comes into the average shop. It is built of high grade steel throughout, with special attention given to those parts subject to the hardest strain. 42 inches wide and table is 8 inches. Capable of exerting over 65 tons pressure.

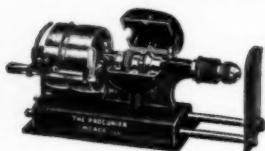
Write for further information

Fall River Grinding & Machine Co.

JESSE ST.,

FALL RIVER, MASS.

"PROCUNIER"



Bench Tappers

Tap blind holes just as easily as through holes with the "Procunier" Safety Friction Device and "Double-Jaw" Tap Holder.

Catalogue 102-B gives complete details of PROCUNIER Tapping Devices, Quick Change Chucks and Stud Setting Tools

Procunier Safety Chuck Co.

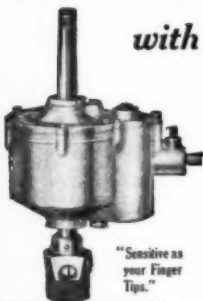
14 So. Clinton St.,

CHICAGO, ILL.

High Speed Sensitive Tapping

with

Ettco Tappers



"Sensitive as
your Finger
Tips."

No. 1 Ettco Tapper—capacity $\frac{1}{4}$ -inch.
No. 2 Ettco Tapper—capacity $\frac{3}{8}$ -inch.
No. 3 Ettco Tapper—capacity $\frac{1}{2}$ -inch.

Anything that can be tapped by hand can be tapped with an Ettco tapper. The Ettco taps blind holes as easily as those which go through—and it eliminates broken taps.

There is no friction to adjust in the Ettco.

Production increased 100% to 500% on many jobs.

Don't condemn the taps you are using; try an Ettco tapper for ten days without obligation.

Eastern Tube & Tool Co., Inc., 600 Johnson Ave.,
BROOKLYN, N. Y.

Abolish Expensive Hand Finishing

with a



Simplex-A Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. Details of this and other styles and sizes on request.

WALLS SALES CORP., 96 Warren Street
NEW YORK



VICTORY POLISHER

**Timken
or Ball-
Bearing**

\$75

**For Single Tight
Pulley Machine**

**\$95.00 For Tight and Loose
Pulley Machine**

America's Greatest Value

Spindle $1\frac{1}{4}$ " between
flanges and 50" overall

HILL-CURTIS CO.
MAKERS OF
POLISHING AND GRINDING MACHINERY
FORMERLY MADE BY HAZARD & PERCY, FOUN. CO. SPRINGFIELD, MASS.
KALAMAZOO MICHIGAN

Send
for
Catalog H

**GITS
BROS.**

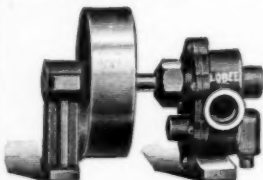
**Better
Oilers**

287 Styles & Sizes



GITS BROS MFG. CO.
1940 S. Kilbourn Chicago,

Lobee Pumps



For
**Circulating
Lubricants, Etc.
Easy To Attach.**

**Made For $\frac{3}{8}$ ", $\frac{1}{2}$ ", 1", 1 $\frac{1}{4}$ "
Standard Pipe Connections**

Write for Booklet "H"

Lobee Pump & Machinery Co.

128 Dearborn St.,

BUFFALO, N. Y.



Taps Broken At or Below The Surface

Delay Work—Increase Costs

Avoid these consequences by having a *Walton Tap Extractor* handy. Simply insert its flutes into the broken tap, twist the end, and the tap slides out. So simple that an apprentice can do it.

Made in three and four-flute styles.

We Ship on a 60-day Trial

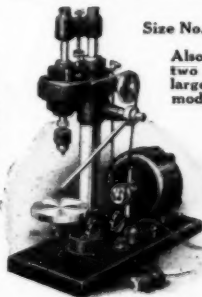
*Send for a "Walton"—
you'll never regret it*

The Walton Company
302 Pearl St., Hartford, Conn.

Use the A. M. Sensitive Drill

**for Work of Highest
Quality—Accuracy**

It will drill holes as small as .010" in diameter, yet is sufficiently sturdy to carry a drill 3/16" in diameter through any material—and up to 1/4" in softer materials. Can also be used for countersinking, chamfering, reaming, lapping, tapping, end milling, etc. Spindle speeds are constant with positive control. Highly recommended by users in practically every industry.

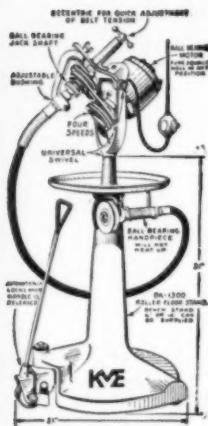


Size No. 1

Also
two
larger
models

Write for Booklet "C"

ADOLPH MUEHLMATT
434-436 Elm St., Cincinnati, Ohio



The KELLERFLEX "B K"

"The Machine of a Hundred Uses"

$\frac{1}{4}$ - $\frac{1}{3}$ - $\frac{1}{2}$ - H. P.
SPEEDS UP TO 10,500

**Non-Heating Shafts
Ball Bearing Handpieces**

**FILING— GRINDING—
POLISHING—DRILLING—
ETC.**

Tell us your problems

**Keller Mech. Engineering Corp.,
58A Washington St., Brooklyn, N. Y.**

Try this "Life of the Factory"

HEAVY DUTY BRIDGEBILT STOOL

Let us send you one of these Bridgebilt stools, express charges prepaid. Try it out under actual working conditions for 30 days, with privilege of returning it to us, express collect. Just pin your business card to this ad and mark the height stool you desire.

Mark inches ☐18 ☐20 ☐22
☐24 ☐26 ☐28 ☐30

☐FREE CATALOG

If you prefer not to send for a stool, check here and we will mail you our illustrated description of Bridgebilt Industrial Seating.



**The Chicago Wire Chair Co.
616 No. LaSalle St., Chicago, Ill.**

FEATHER-WEIGHT Grinder—Sander—Polisher

Mall
TRADE MARK



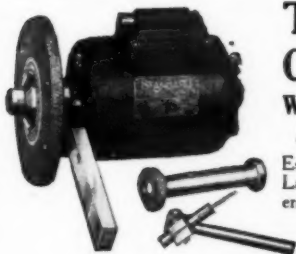
The Feather Weight machine is designed to be carried on the operator's shoulders like a knapsack, slung conveniently from overhead or mounted on a bench or a pedestal base.

Abundantly powered, yet hand tool freedom for the operator makes this machine ideal for removing form marks on concrete, boat sanding, and innumerable other grinding, polishing, rubbing, sanding and filing operations.

Write for Complete Information

Mall Tool Company

7730 So. Chicago Ave., Chicago, Ill.



Tool Post or Center Grinder

Without Horizontal Feed

Also made with Horizontal Feed

Especially adapted for grinding Lathe Centers, Cutters, Reamers, Dies, Rolls and various kinds of work on Lathe, Milling Machine, Shaper or Planer.

Bearings are made of Phosphor Bronze, and they are split taper adjustable to wear and dust proof.

Angle Plate Grinders, Electric Drills, Grinding, Polishing and Buffing Machines in various types and sizes.

Established 1912

Write for Late Catalog

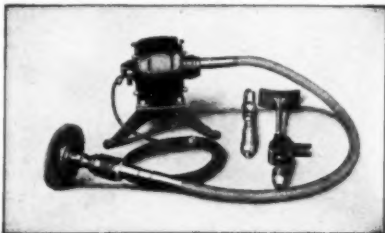
THE STANDARD ELECTRICAL TOOL CO.

1938 W. 8th St.,

Cincinnati, Ohio

The Whirlwind Buffer and Grinder

Will cut the cost on any unhandy
grinding or polishing job



Send for our latest bulletin

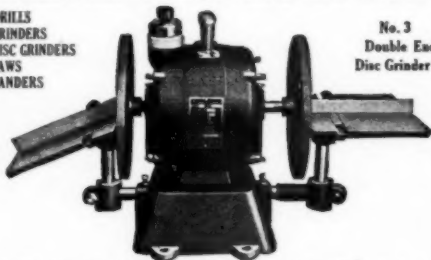
Stow Flexible Shaft Co., 3454 Ludlow St.,
Philadelphia, Pa.

The Best Since 1876

Winterhoff ^{Motor Driven} Portable Tools

DRILLS
GRINDERS
DISC GRINDERS
SAWS
SANDERS

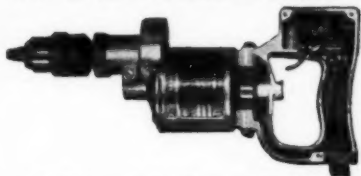
No. 3
Double End
Disc Grinder



The No. 3 has been designed to meet a demand for a medium-priced machine that would furnish a true flat grinding surface, and would stand up under any usage. Its sturdiness, accuracy and handiness are unsurpassed. *Write today concerning Winterhoff Portable Tools.*

Winterhoff Tool & Machine Co., 109 South Elkhart Ave.,
ELKHART, IND., U.S.A.

WODACK General Purpose TOOL



DRILLS
GRINDS
BUFFS
POLISHES

Substantial—Dependable—Low Priced

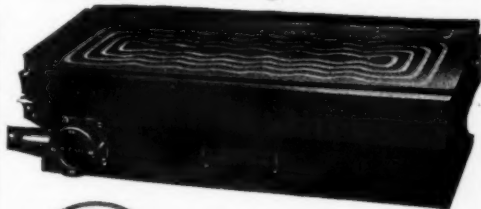
New "keyless" Handlocking Chuck provides firm gripping of drill-bit—no possibility of slipping. No key to lose or misplace. Timken roller bearing and ball bearing on spindle insures wear-resistance. Drills from the smallest to and including $\frac{3}{8}$ " in metal; $\frac{1}{2}$ " in wood. Quick-change table to hold drill vertically or horizontally can be supplied. C-E motor 110-220 d. c. or a. c.

Send for Bulletin 100

Wodack Electric Tool Corp.
4627-4629 W. Huron St., Chicago, Ill.

Also Makers of Portable Electric Hand Saws, Grinders, Mortisers, Routers

"D & W" Flat & Rotary Magnetic Chucks

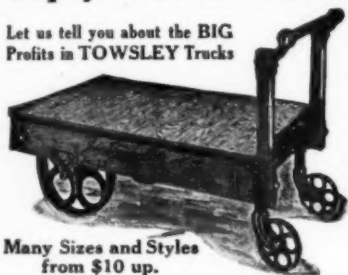


Our Extensive Line covers a wide range. They save time and cut costs holding iron and steel pieces. Glad to investigate and report on any problem you may have in connection with the use of Flat and Rotary Magnetic Chucks. Address

J. & H. Electric Co.
159 Clifford St., Providence, R. I.

Repay Cost 5 Times a Year

Let us tell you about the BIG
Profits in TOWSLEY Trucks



Many Sizes and Styles
from \$10 up.

Efficiency
EXPERTS
say that

TOWSLEY TRUCKS

repay their
cost every
two to three
months.

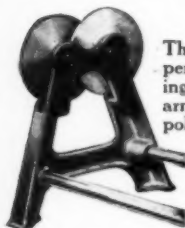
Every style
for every
need.

Write us for details of the BIG truck profits today!

**John T. Towsley Mfg. Co., Cincinnati,
Ohio, U. S. A.**

Twentieth Century Balancing Tool

Always on the level



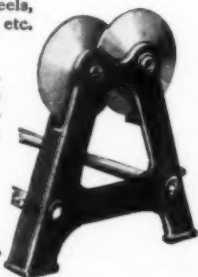
The most practical, sensitive and inexpensive device manufactured for balancing pulleys, cones, armatures, fly wheels, polishing wheels, etc.

Will set anywhere and is easily portable. In sizes

up to 24,000 pounds capacity.

Ask for the Bulletin

**Sundstrand Machine Tool Co.
Rockford, Ill.**



SAVE CUTTING OIL



Tolhurst Chip Wringers reclaim 6 to 15 gallons per load and handle three to four loads per hour. Basket sizes 20" to 48".

TOLHURST MACHINE WORKS, Inc., Troy, N. Y.

Style G



Opened

Style G



Style A



Style C



Style B



Style D



Style D



Opened

Style E



Style F



TUCKER Oil Hole Covers

ALSO—HERCULES
SHEAR AND ROD CUTTERS
AND
SCREW MACHINE PRODUCTS

A Type for Every Service

Send for Catalogue No. 12



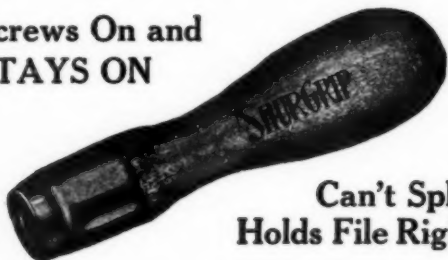
W. W. & C. F. TUCKER, INC., 612 Capitol Ave.,
Hartford, Conn.

FOREIGN AGENTS: Fenwick Freres & Co., Paris, France
Alfred Herbert, Ltd., Yokohama, Japan

Good Bye to File Troubles!

Here's a File Handle Which Absolutely—

**Screws On and
STAYS ON**



**Can't Split
Holds File Rigid**



Showing
the bull-dog,
vise-like hold
of Shur-Grip
File Handle.
Thread
is flexible,
taking up any
irregularities
in shape of
tang.

Hyro Shur - Grip

Patented July 12, 1921, No. 1,384,154

File Handle is constructed of selected hardwood, into which a steel ferrule is securely forced. The wood **CAN'T** split or crack.

When the handle is being attached, its case-hardened steel thread cuts into the tang of the file like a die—obviating all slipping, as well as the consequent injury likely to occur to the operator.

Shur-Grip Handles do not irritate or tire the hand. *They soon pay for themselves.* Made in the following sizes:

- No. 2—length 4" —for 3- 6" files.
- No. 3—length 4½" —for 6-10" files.
- No. 4—length 5" —for 10-14" files.
- No. 5—length 5½" —for 14-18" files.

Specify size in writing for sample

HYRO MFG. CO., Inc.

201 Varick St.,

New York, N. Y.

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Nicholson & Co., W. H., Wilkes-Barre, Pa.
- Angle Plates**
Passman Bros., 707 W. Washington, Chicago
- Auto-Gages For Dies**
Dandy Machine Specialties, Inc., 4918 Lincoln Ave., Chicago
- Automatons**
New Britain Machine Co., New Britain, Conn.
- Balancing Ways**
Anderson Bros. Mfg. Co., Rockford, Ill.
Sundstrand Machine Tool Co., Rockford, Ill.
- Balls, Bearing and Burnishing**
Abbott Ball Co., Hartford, Conn.
- Band Saw Machines, for Metal**
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
- Porter-Cable Machine Co., Syracuse, N. Y.
Racine Tool & Machine Co., Racine, Wis.
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Norma-Hoffman Bearings Corp., Stamford, Conn.
- Bearings, Roller**
Norma-Hoffman Bearings Corp., Stamford, Conn.
- Bearings, Thrust**
Norma-Hoffman Bearings Corp., Stamford, Conn.
- Bench Legs, Steel**
New Britain Mch. Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4058 N. Tripp Ave., Chicago
- Bending Machines, Hand and Power**
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
- Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mch. Co., T. H. 417E. 51st., N. Y.
Lourie Mfg. Co., 555 Washington, Chicago
- Fedrick Tool & Machine Co., Philadelphia
- Bending Rolls**
Hendley & Whittemore Co., Beloit, Wis.
- Bolt and Nut Machinery**
Economy Engineering Co., Willoughby, O.
Foot-Hurt Co., Cleveland, O.
Gateman Mfg. Co., Manitowoc, Wis.
- Bolt and Nut Threading Attachments**
Saunders' Sons, D., Inc., Yonkers, N. Y.
- Bolt Threading Diesheads**
Saunders' Sons, D., Inc., Yonkers, N. Y.
- Boring Bars**
Fedrick Tool & Machine Co., Philadelphia
- Boring Bars, Cylinder**
Fedrick Tool & Machine Co., Philadelphia
- Boring, Drilling & Milling Machines**
Defiance Machine Co., Defiance, O.
- Boring and Drilling Mchcs., Vertical**
Baker Brothers, Inc., Toledo, Ohio
- Boring and Turning Machines, Vertical**
Cincinnati Planer Co., Cincinnati, Ohio
- Boring Machines, Horizontal**
Avey Drilling Machine Co., Cincinnati
Lambert Mch. & Engr'g Co., Cleveland, O.
Fedrick Tool & Machine Co., Philadelphia
- Boring Tools**
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Schwerdtle Stamp Co., Bridgeport, Conn.
- Bulldozers, Hydraulic**
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Abbott Ball Co., Elmwood, Conn.
- Bushing Finishing Machines.**
Economy Engineering Co., Willoughby, O.
- Casters, Truck**
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Springfield Machine Tool Co., Springfield, O.
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- Chucks, Automatic and Quick Change**
Gateman Mfg. Co., Manitowoc, Wis.
Procunier Safety Chuck Co., 18 S. Clinton St., Chicago
- Chucks, Collet**
Hardinge Brothers, Inc., 1770 Berton Ave., Chicago
Procunier Safety Chuck Co., 18 S. Clinton St., Chicago
- Chucks, Drill**
Eastern Tube & Tool Co., Inc., 580 Johnson Ave., Brooklyn, N. Y.
Hartford Special Mch. Co., Hartford, Conn.
Scully-Jones & Co., 1901 So. Rockwell St., Chicago
- Chucks, Drill and Tap**
Procunier Safety Chuck Co., 18 S. Clinton St., Chicago
Scully-Jones & Co., 1901 So. Rockwell St., Chicago
- Chucks, Keyway Cutting**
Scully-Jones & Co., Ry. Exch. Bldg., Chicago
- Chucks, Lathe.**
Stevens Inc., John B., 27 Cleveland Place, New York
Tomkins-Johnson Co., Jackson, Mich.
United Hardware & Tool Corp., 50 Howard St., New York
- Chucks, Magnetic**
J. & H. Electric Co., Providence, R. I.
- Chucks, Segment Wheel**
Rogers & Co., Samuel C., Buffalo, N. Y.
- Clamps, Die**
Dandy Machine Specialties, Inc., 4918 Lincoln Ave., Chicago
- Clutches, Friction**
Carroll Mfg. Co., L. W., Batavia, Ohio
Conway Clutch Co., Cincinnati, O.
Edgemont Machine Co., Dayton, O.
Foot Bros. Gear & Machine Co., 218 Curtis, Chicago
- Cold Saws**
Burke Machine Tool Co., Conneaut, Ohio
- Collets**
Hardinge Brothers, Inc., 1770 Berton Ave., Chicago
- Comparators**
Federal Products Corp., Providence, R. I.
- Contract Work Wanted**
Burke Machine Tool Co., Conneaut, O.
- Care Drills**
Gairing Tool Co., Detroit, Mich.
- Counterbores and Spot Facers**
Gairing Tool Co., Detroit, Mich.
Glennier Co., J. C., Detroit, Mich.
- Couplings, Flexible**
Foot Bros. Gear & Machine Co., 218 Curtis St., Chicago
Nicholson Co., W. H., Wilkes-Barre, Pa.
- Couplings, Friction Clutch**
Conway Clutch Co., Cincinnati, O.
- Couplings, Shaft**
Nicholson Co., W. H., Wilkes-Barre, Pa.
- Cranes, Portable**
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Canton Foundry & Mch. Co., Canton, Ohio

Classified Finding Index

Crank Pin Turning Machine
Padrick Tool & Machine Co., Philadelphia

Cutters, Keyseating
Davis Keyseater Co., Rochester, N. Y.
Scully-Jones & Co., 1901 So. Rockwell St., Chicago

Cutters, Milling
Genesee Mfg. Co., Rochester, N. Y.
Cylinder Boring Machines, Portable
Padrick Tool & Machine Co., Philadelphia

Demagnetizers
J. & H. Electric Co., Providence, R. I.

Dial Indicators
Federal Products Corp., Providence, R. I.

Die Making Machines
Oliver Instrument Co., Adrian, Mich.

Dies, Automatic Self-Opening
Bickert-Shafer Co., Erie, Pa.

Die Sets
Dunly Machine Specialties, Inc., 4915 Lincoln Ave., Chicago
U. S. Tool Co., Inc., Amper, N. J.

Die Sinking and Engraving Machines
Gorton Machine Co., Geo., Racine, Wis.
Keller Mech. Eng. Corp., 68A Washington St., Brooklyn, N. Y.
Reed-Prattice Corp., Worcester, Mass.

Discs, Machine Steel
Passman Bros., 707 W. Washington, Chicago

Dividing Heads
Stevens Inc., John B., 27 Cleveland Place, New York

Drill Racks
Peeterson Machine Co., Racine, Wis.

Drilling Heads, Multiple
National Automatic Tool Co., Richmond, Ind.
United States Drill Head Co., Cincinnati

Drilling Machines, Automatic
Baker Brothers, Inc., Toledo, Ohio.
National Automatic Tool Co., Richmond, Ind.

Drilling Machines, Bench
Avey Drilling Machine Co., Cincinnati
Buffalo Forge Co., Buffalo, N. Y.
Burke Machine Tool Co., Connecticut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
National Automatic Tool Co., Richmond, Ind.
Sigourney Tool Co., Hartford, Conn.
Stecher Co., Chas., 2465 N. Greenview Ave., Chicago

Taylor & Fenn Co., Hartford, Conn.
Winterhoff Tool & Machine Co., Elkhart, Ind.

Drilling Machines, Boring
Cincinnati Bickford Tool Co., Oakley, Cincinnati, Ohio

Drilling Machines, Gang
Baker Brothers, Inc., Toledo, Ohio.
Cincinnati Bickford Tool Co., Oakley, Cincinnati, Ohio

Drilling Machines, Horizontal
National Automatic Tool Co., Richmond, Ind.
Stevens Inc., John B., 27 Cleveland Place, New York

Drilling Machines, Multiple Spindle
Avey Drilling Machine Co., Cincinnati
Baker Brothers, Inc., Toledo, Ohio.
Cincinnati Bickford Tool Co., Oakley, Cincinnati, Ohio

Foot-Burt Co., Cleveland, O.
National Automatic Tool Co., Richmond, Ind.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Portable Electric
Cincinnati Electrical Tool Co., Cincinnati, O.
Hisey-Wolf Machine Co., Cincinnati, O.
Mall Tool Co., 7730 S. Chicago Ave., Chicago
Standard Electrical Tool Co., Cincinnati, O.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 6001 N. Lincoln St., Chicago

Winterhoff Tool & Machine Co., Elkhart, Ind.
Wedack Electric Tool Corp., 4629 W. Huron St., Chicago.

Drilling Machines, Post
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Hammond Mfg. Co., Cleveland, Ohio.

Drilling Machines, Radial
American Tool Works Co., Cincinnati, O.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Cincinnati Bickford Tool Co., Oakley, Cincinnati, Ohio

Dreese Machine Tool Co., Cincinnati, O.
Hammond Mfg. Co., Cleveland, Ohio.
Reed-Prattice Corp., Worcester, Mass.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Sensitive
Avey Drilling Machine Co., Cincinnati
Baker Brothers, Inc., Toledo, Ohio.
Buffalo Forge Co., Buffalo, N. Y.
Burke Machine Tool Co., Connecticut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Foot-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Muehlmann, Adolph, Cincinnati, O.
Sigourney Tool Co., Hartford, Conn.
Stecher Co., Chas., 2465 N. Greenview Ave., Chicago

Taylor & Fenn Co., Hartford, Conn.
U. S. Machine Tool Co., Cincinnati, O.

Drilling Machines, Vertical
Avey Drilling Machine Co., Cincinnati
Buffalo Forge Co., Buffalo, N. Y.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Cincinnati Bickford Tool Co., Oakley, Cincinnati, Ohio

Foot-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Marsh Machinery Co., A. B., Cleveland, Ohio
National Automatic Tool Co., Richmond, Ind.
Oosterlein Machine Co., Cincinnati, Ohio
Sigourney Tool Co., Hartford, Conn.
Standard Electrical Tool Co., Cincinnati, O.
Stecher Co., Chas., 2465 N. Greenview Ave., Chicago

Taylor & Fenn Co., Hartford, Conn.
Drills, Twist
Cleveland Twist Drill Co., Cleveland, Ohio.

Emery Stands
Carroll Mfg. Co., L. W., Batavia, Ohio

Emery Wheel Dressers and Cutters
Taylor & Fenn Co., Hartford, Conn.
Western Tool & Mfg. Co., Springfield, O.

Engravers, Mechanical and Hand
Schwerdtle Stamp Co., Bridgeport, Conn.

Etching Machines, Electric
Brewster Co., Wm., Inc., 60 Church St., New York

Lynn Electric Equipment Co., Toledo, Ohio.

Feeders, Oil and Soda Water
New Britain Machine Co., New Britain, Conn.

Filing Machines
LaPorte Machine & Tool Co., LaPorte, Ind.
Oliver Instrument Co., Adrian, Mich.
Wardwell Mfg. Co., Cleveland, O.

Filing and Sawing Machines
LaPorte Machine & Tool Co., LaPorte, Ind.

Files
Hammond Saw & Steel Co., Fitchburg, Mass.

Flexible Shaft Machinery
Keller Mech. Eng. Corp., 68A Washington St., Brooklyn, N. Y.
Mall Tool Co., 7730 S. Chicago Ave., Chicago

Forges
Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Forgings, Hollow Bored
American Hollow Boring Co., Erie, Pa.

Furniture, Machine Shop
New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
Western Tool & Mfg. Co., Springfield, O.

Classified Finding Index

Gauges, Cylindrical and Thread
Federal Products Corp., Providence, R. I.

Gauges, Taper
Hartford Special Mch. Co., Hartford, Conn.

Gear Cutters
Triplex Machine Tool Corp., 50 Church St.,
New York

Gear Hobbors
Triplex Machine Tool Corp., 50 Church St.,
New York

Gears
Boston Gear Works Sales Company, Norfolk
Downs, Mass.
Chicago Stock Gear Works, 105 S. Jefferson,
Chicago
Foote Bros. Gear & Machine Co., 213 Curtiss
St., Chicago
Massachusetts Gear & T. Co., Woburn, Mass.

Grinding Machines, Belt
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Pearless Surfacing Machine Co., Troy, N. Y.
Wells Sales Corp., 96 Warren St., New York

Grinding Machines, Bench
Carroll Mfg. Co., L. W., Batavia, Ohio
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Hill-Curtis Co., Kalamazoo, Mich.
Hisey-Wolf Machine Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.

Grinding Machines, Cutter, Reamer and Tool
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Jarecki Mch. & T. Co., Grand Rapids, Mich.
LeBlond Mch. Tool Co., B. E., Cincinnati, O.
National Machine Tool Co., Racine, Wis.
Oesterlein Machine Co., Cincinnati, Ohio
Oliver Instrument Co., Adrian, Mich.
Stevens Inc., John B., 27 Cleveland Place,
New York
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Cylindrical
Jarecki Mch. & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Jarecki Mch. & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Disc
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Porter Cable Machine Co., Syracuse, N. Y.

Grinding Machines, Drill
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Oliver Instrument Co., Adrian, Mich.

Grinding Machines, Face
Rogers & Co., Samuel C., Buffalo, N. Y.
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Flexible Shaft
Keller Mch. Eng. Corp., 68A Washington St.,
Brooklyn, N. Y.

Grinding Machines, Internal
Mall Tool Co., 8389 S. Chicago Ave., Chgo.
National Machine Tool Co., Racine, Wis.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Knife and Shear Blade
Rogers & Co., Samuel C., Buffalo, N. Y.

Grinding Machines, Portable Electric
Cincinnati Electrical Tool Co., Cincinnati, O.
Hisey-Wolf Machine Co., Cincinnati, O.
Keller Mech. Eng. Co., 68A Washington
St., Brooklyn, N. Y.
Mall Tool Co., 7780 S. Chicago Ave., Chgo.

National Machine Tool Co., Racine, Wis.
Porter Cable Machine Co., Syracuse, N. Y.
Rogers & Co., Samuel C., Buffalo, N. Y.
Standard Electrical Tool Co., Cincinnati, O.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 6001 N. Lincoln St., Chgo
Wedack Electric Tool Corp., 4629 W. Huron
St., Chicago.

Grinding Machines, Snagging
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Hill-Curtis Co., Kalamazoo, Mich.
Jarecki Mch. & T. Co., Grand Rapids, Mich.

Grinding Machines, Surface
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Illinois Machine & Mfg. Co., LaSalle, Ill.
Rogers & Co., Samuel C., Buffalo, N. Y.
Stevens Inc., John B., 27 Cleveland Place,
New York
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Tap
Gallmeyer & Livingston Co., Grand Rapids,
Mich.

Grinding Machines, Tool
Hill-Curtis Co., Kalamazoo, Mich.
Standard Electrical Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Universal
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Thompson Grinder Co., Springfield, Ohio

Hack Saw Blades
Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago
Pearless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.
Simonds Saw & Steel Co., Fitchburg, Mass.

Hack Saw Machines
Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago
Pearless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.

Hammers, Electric Drill
Wedack Electric Tool Corp., 4629 W. Huron
St., Chicago.

Handles, File
Hyro Mfg. Co., 200 Varick St., New York.

Handles, Soldering Iron
Hyro Mfg. Co., 200 Varick St., New York.

Hardness Testers
Wilson-Macaulen Co., Inc., 735 E. 143rd St.,
New York

Hob Grinders
Triplex Machine Tool Corp., 50 Church St.,
New York

Hoists, Portable
Canton Foundry & Machine Co., Canton, Ohio

Hose Couplings
Hunt & Son, C. H., Salem, Ohio

Hydraulic Machinery
Lourie Mfg. Co., 565 Washington, Chicago

Index Centers, Single and Multi Spd.
Stevens Inc., John B., 27 Cleveland Place,
New York

Jigs and Fixtures
Hartford Special Mch. Co., Hartford, Conn.

Keyseating Machines
Baker Brothers, Inc., Toledo, Ohio.
Burr & Son, John T., Brooklyn, N. Y.
Chattanooga Mch. Co., Chattanooga, Tenn.
Davin Keyseater Co., Rochester, N. Y.
National Machine Tool Co., Cincinnati

Lathe Accessories and Attachments
Cincinnati Lathes & Tool Co., Cincinnati, Ohio
Maxwell Products Co., Cleveland, Ohio
Sidney Machine Tool Co., Sidney, Ohio

Classified Finding Index

Lathe Turrets

Maxwell Products Co., Cleveland, O.

Lathes, Bench

Hardinge Brothers, Inc., 1770 Berteau Ave.,
Chicago
Monarch Machine Tool Co., Sidney, O.

Lathes, Engine

American Tool Works Co., Cincinnati, O.
Bradford Machine Tool Co., Cincinnati, O.
Carroll & Jamieson Mch. Tool Co., Batavia, O.
Cincinnati Lathe & Tool Co., Cincinnati, O.
Hamilton Tool Co., Hamilton, O.
Hardinge Brothers, Inc., 1770 Berteau Ave.,
Chicago

LeBlond Mch. Tool Co., R.K., Cincinnati, O.
McCabe Lathe & Machinery, Corp., J. J.
149 Broadway, New York

Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Reed-Prentice Corp., Worcester, Mass.
Sidney Machine Tool Co., Sidney, Ohio
Springfield Machine Tool Co., Springfield, O.

Lathes, Extension Bed Gap

LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Rahn-Larmon Co., Cincinnati, O.

Lathes, Gap

LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Lathes, Hand

Stevens Inc., John B., 27 Cleveland Place,
New York

Lathes, Manufacturing

Cincinnati Lathe & Tool Co., Cincinnati, Ohio
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Reed-Prentice Corp., Worcester, Mass.
Sundstrand Machine Tool Co., Rockford, Ill.

Lathes, Precision

Cincinnati Lathe & Tool Co., Cincinnati, Ohio
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Lathes, Short Bed

Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Sidney Machine Tool Co., Sidney, Ohio

Lathes, Tool Room

Cincinnati Lathe & Tool Co., Cincinnati, Ohio
Cisco Machine Tool Co., Cincinnati, Ohio.

Lathes, Turret

Bradford Machine Tool Co., Cincinnati, O.
Cincinnati Lathe & Tool Co., Cincinnati, Ohio
Monarch Machine Tool Co., Sidney, O.

Mandrels, Expanding

Nicholson & Co., W. H., Wilkes-Barre, Pa.
Western Tool & Mfg. Co., Springfield, O.

Mandrels, Hollow

Hyro Mfg. Co., 200 Varick St., New York.

Mandrels, Solid

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Milling Attachments

Burke Machine Tool Co., Connecticut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Oesterlein Machine Co., Cincinnati, Ohio
Porter-Cable Machine Co., Syracuse, N. Y.
Reed-Prentice Corp., Worcester, Mass.
Stevens Inc., John B., 27 Cleveland Place,
New York
Taylor & Fenn Co., Hartford, Conn.

Milling Machine Spacing Washers

Maxwell Products Co., Cleveland, Ohio

Milling Machines, Bench

Burke Machine Tool Co., Connecticut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Hand

Burke Machine Tool Co., Connecticut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.
Superior Machine & Eng. Co., Detroit, Mich.
U. S. Machine Tool Co., Cincinnati, O.

Milling Machines, Horizontal

Oesterlein Machine Co., Cincinnati, Ohio

Milling Machines, Manufacturing

Kearney & Trecker Corp., Milwaukee, Wis.

Milling Machines, Plain

Burke Machine Tool Co., Connecticut, Ohio
Galmeyer & Livingston Co., Grand Rapids,
Mich.
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Portable

Fedrick Tool & Machine Co., Philadelphia

Milling Machines, Spline

Taylor & Fenn Co., Hartford, Conn.

Milling Machines, Universal

Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Milling Machines, Vertical

Burke Machine Tool Co., Connecticut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Reed-Prentice Corp., Worcester, Mass.
Taylor & Fenn Co., Hartford, Conn.

Mills, Adjustable Hollow

Genesee Mfg. Co., Rochester, N. Y.

Mortisers, Electric Hand

Wodack Electric Tool Corp., 4629 W. Huron
St., Chicago.

Motors, Electric

Reliance Electric & Eng. Co., Cleveland

Name Plates, Etched and Stamped

Schwerdtle Stamp Co., Bridgeport, Conn.

Nut Setters, Electric Hand

Wodack Electric Tool Corp., 4629 W. Huron
St., Chicago.

Oil Cups

Gits Bros. Mfg. Co., 1940 S. Kilbourn Ave.,
Chicago
Tucker, W. W. & C. F., Hartford, Conn.

Oil Extractors

Tolhurst Machine Works, Troy, N. Y.

Oil Hole Covers

Tucker, W. W. & C. F., Inc., Hartford, Conn.

Pattern Shop Machinery

Towsley Mfg. Co., John T., Cincinnati

Pins, Leader And Dowel

Danly Machine Specialties, Inc., 4818 Lincoln
Ave., Chicago

Pipe Bending Machines

Fedrick Tool & Machine Co., Philadelphia

Pipe Cutters, Hand

Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Cutting and Threading Machines

Gateman Mfg. Co., Manitowoc, Wis.

Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Threading Dieheads

Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Vises

Saunders' Sons, D., Inc., Yonkers, N. Y.

Planers, Valve Seat, Portable

Fedrick Tool & Machine Co., Philadelphia

Planing Machines

Cincinnati Planer Co., Cincinnati, Ohio
Cleveland Planer Co., Cleveland, Ohio
Reed-Prentice Corp., Worcester, Mass.

Paint Thinning Machines

Oliver Instrument Co., Adrian, Mich.

Classified Finding Index

Polishing and Buffing Machines

Cincinnati Electrical Tool Co., Cincinnati, O.
Hill-Curtis Co., Kalamazoo, Mich.
Hisey-Wolf Machine Co., Cincinnati, O.
Mail Tool Co., 7730 S. Chicago Ave., Chicago
New Britain Machine Co., New Britain, Conn.
North Side Tool Co., Dayton, Ohio
Standard Electrical Tool Co., Cincinnati, O.

Presses, Arbor

Atlas Press Co., Kalamazoo, Mich.
Lourie Mfg. Co., 565 Washington, Chicago
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Sheldon Machine Co., 3253 Cottage Grove Ave., Chicago
Wilson, R. K., Buffalo, N. Y.

Presses, Broaching

Lourie Mfg. Co., 565 Washington, Chicago

Presses, Drawing

Lourie Mfg. Co., 565 Washington, Chicago

Presses, Flanging

Lourie Mfg. Co., 565 Washington, Chicago

Presses, Foot

Rockford Iron Works, Rockford, Ill.
Taylor & Fenn Co., Hartford, Conn.

Presses, Forcing

Lourie Mfg. Co., 565 Washington, Chicago

Presses, Forming

Lourie Mfg. Co., 565 Washington, Chicago

Presses, Power

Hendley & Whittemore Co., Beloit, Wis.
Lourie Mfg. Co., 565 Washington, Chicago
Rockford Iron Works, Rockford, Ill.

Presses, Punch

Lewthwaite Mch. Co., T. H., 417 E. 31st., N. Y.
Rockford Iron Works, Rockford, Ill.

Presses, Screw

Fall River Grinding & Machine Co., Fall River, Mass.
Jarochi Mch. & T. Co., Grand Rapids, Mich.
Towsley Mfg. Co., John T., Cincinnati

Presses, Wheel

Lourie Mfg. Co., 565 Washington, Chicago

Profiling Machines

Oliver Instrument Co., Adrian, Mich.

Pulley Machinery

Avery Drilling Machine Co., Cincinnati

Pulleys, Iron, Solid and Split

Conway Clutch Co., Cincinnati, O.

Pumps, Coolant

Fulio Specialties Co., Blanchester, O.
Lobee Pump & Mch. Co., Buffalo, N. Y.

Pumps, Hydraulic

Lobee Pump & Mch. Co., Buffalo, N. Y.
Lourie Mfg. Co., 565 Washington, Chicago

Pumps, Lubricant

Ruthman Machinery Co., Cincinnati, O.

Punch Press Feeds

Rockford Iron Works, Rockford, Ill.
Wittek Mfg. Co., 2532 S. Kedzie Ave., Chicago

Punch, Shear and Bender, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Hyro Mfg. Co., 230 Varick St., New York
Lewthwaite Mch. Co., T. H., 417 E. 31st St., New York
Whitney Metal Tool Co., Rockford, Ill.

Punches, Power

Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies

Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mch. Co., T. H., 417 E. 31st., N. Y.
Rockford Iron Works, Rockford, Ill.

Pyrometers

Wilson-Maculek Co., Inc., 785 E. 143rd St., New York

Racks, Bar Stock

New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4088 N. Tripp Ave., Chicago
Yoke Supply Co., Wm. S., Canton, O.

Reamers, Adjustable

Cleveland Twist Drill Co., Cleveland, Ohio.
Schellenbach-Hunt Tool Co., Cincinnati, O.

Reamers, Expanding

Lambert Mch. & Engin'g Co., Cleveland, O.

Reamer Holders

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Reels, Extension

Cincinnati Specialty Mfg. Co., Cincinnati, O.

Riveting Machine Equipment

Lintey Bros. Co., Bridgeport, Conn.

Riveting Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Red Cutters

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mch. Co., T. H., 417 E. 31st., N. Y.
Tucker, W. W. & C. F., Inc., Hartford, Conn.

Rotary Tables, Hand Feed

Stevens Inc., John B., 27 Cleveland Place, New York

Saw Sharpening Machines

Huther Bros. Saw Mfg. Co., Rochester, N. Y.
Rogers & Co., Samuel C., Buffalo, N. Y.
Wardwell Mfg. Co., Cleveland, O.

Saws, Electric Hand

Wodack Electric Tool Corp., 4623 W. Huron St., Chicago

Saws, Metal Cutting Circular and Band

Huther Bros. Saw Mfg. Co., Rochester, N. Y.
Simonds Saw & Steel Co., Fitchburg, Mass.

Scraping Machines, Hand & Pneumatic

Anderson Brothers Mfg. Co., Rockford, Ill.

Screw Drivers, Electric

Hisey-Wolf Machine Co., Cincinnati, O.

Screw Driving Machines, Automatic

Reynolds Machine Co., Mansfield, Ohio

Screw Machines, Automatic

New Britain Mch. Co., New Britain, Conn.

Seam Welders, Electric

Welding Appliance Co., 2111 W. Lake St., Chicago

Set-Up Appliances

Standard Shop Equip. Co., Philadelphia, Pa.

Shafts, Flexible

Keller Mech. Eng. Corp., 68A Washington St., Brooklyn, N. Y.

Mail Tool Co., 7730 S. Chicago Ave., Chgo.
Stow Flexible Shaft Co., Philadelphia, Pa.

Strand Co., N. A., 6091 N. Lincoln St., Chgo.

Shafts, Steel

American Hollow Boring Co., Erie, Pa.

Shaping Machines

American Tool Works Co., Cincinnati, O.
Osborne & Sexton Machy. Co., Columbus, O.
Rhodes Mfg. Co., Hartford, Conn.
Smith & Mills Co., Cincinnati

Springfield Machine Tool Co., Springfield, O.

Shears, Alligator

Canton Foundry & Machine Co., Canton, O.

Shears, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Hendley & Whittemore Co., Beloit, Wis.

Lewthwaite Machine Co., T. H., 417 E. 31st St., New York

Tucker, W. W. & C. F., Inc., Hartford, Conn.

The Unishar Co., 270 Lafayette, New York

Whitney Metal Tool Co., Rockford, Ill.

Classified Finding Index

Shears, Electric Hand
The Unishear Co., 270 Lafayette, New York

Shears, Power
Handley & Whittemore Co., Beloit, Wis.
The Unishear Co., 270 Lafayette, New York

Sheet Metal Cutting Tools
The Unishear Co., 270 Lafayette, New York

Slotting Machines
Rhodes Mfg. Co., Hartford, Conn.

Slotting Machines, Screw Head
Stevens Inc., John B., 27 Cleveland Place, New York

Spacing Washers
Detroit Stamping Co., Detroit, Mich.

Special Tools and Machinery
Bradford Machine Tool Co., Cincinnati, O.
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago

Gateman Mfg. Co., Manitowoc, Wis.
Illinois Machine & Mfg. Co., LaSalle, Ill.
Stecher Co., Chas., 2452 N. Greenview Ave., Chicago

Superior Machine & Eng. Co., Detroit, Mich.
U. S. Tool Co., Inc., Ampers, N. J.

Speed Reducers
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago

Sprockets
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago

Massachusetts Gear & T. Co., Woburn, Mass.

Stamps, Steel and Rubber
Schwerdtle Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board
Schwerdtle Stamp Co., Bridgeport, Conn.

Steels and Chairs, Factory
Chicago Wire Chair Co., 619 N. La Salle St., Chicago

Pellard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

Straightening Machines
Springfield Machine Tool Co., Springfield, O.

Towsley Mfg. Co., John T., Cincinnati
Whitney Metal Tool Co., Rockford, Ill.

Stud Setters
Proconer Safety Chuck Co., 18 S. Clinton St., Chicago

Tap Extractors
Walton Co., Hartford, Conn.

Tap Holders
Gateman Mfg. Co., Manitowoc, Wis.
Proconer Safety Chuck Co., 18 S. Clinton St., Chicago

Tapping Machines and Attachments
Alto Mfg. Co., 1647 Weffman St., Chicago.

Avey Drilling Machine Co., Cincinnati
Baker Brothers, Inc., Toledo, Ohio.

Burke Machine Tool Co., Conneaut, Ohio
Eastern Tube & Tool Co., Inc., 580 Johnson Ave., Brooklyn, N. Y.

Gateman Mfg. Co., Manitowoc, Wis.
Hammond Mfg. Co., Cleveland, Ohio

Leland Gifford Co., Worcester, Mass.
Proconer Safety Chuck Co., 18 S. Clinton St., Chicago

Richard-Shafer Co., Erie, Pa.
Whitney Metal Tool Co., Rockford, Ill.

Thread Dies
Colven, J. M., Yonkers, N. Y.

Thread Millers
Triplex Machine Tool Corp., 60 Church St., New York

Threading Machines
Gateman Mfg. Co., Manitowoc, Wis.
Richard-Shafer Co., Erie, Pa.

Threading Tools
Armstrong Bros. Tool Co., 308 N. Francisco Ave., Chicago

Tool Holder Bits
Simonds Saw & Steel Co., Pittsburg, Mass.

Tool Holders

Armstrong Bros. Tool Co., 308 N. Francisco Ave., Chicago

Western Tool & Mfg. Co., Springfield, O.

Tool Racks

Chicago Wire Chair Co., 619 N. La Salle St., Chicago

Tool Stands

Pellard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

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Armstrong Bros. Tool Co., 308 N. Francisco Ave., Chicago

Tools, Lathe and Planer

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Tools, Machinists'

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Genesee Mfg. Co., Rochester, N. Y.

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New Britain Machine Co., New Britain, Conn.
Pellard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

Towsley Mfg. Co., John T., Cincinnati

Turntables

Canton Foundry & Machine Co., Canton, O.

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Horseman Mfg. Co., Inc., Torrington, Conn.

Boston Gear Works Sales Company, Norfolk Downs, Mass.

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Bernstein & Co., Geo. M., 549 W. Washington Blvd., Chicago

Bertolette Machine Tool Co., Inc., Jersey City, N. J.

Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.

Carlson Machinery Co., Davenport, Iowa
Central States Machinery Co., 134 South Clinton, Chicago

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Clinton Mch. Co., 128 S. Clinton St., Chgo.

Davis Machinery Exchange, Toledo, O.
Detroit Machinery Exchange, Detroit, Mich.

Donahue Steel Products Co., 74th and Ashland Ave., Chicago

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Easley Machinery Co., E. L., 555 Washington Blvd., Chicago

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Hill, Clarke & Co., 649 W. Washington Blvd., Chicago

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International Mch. Co., Detroit, Mich.
Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.

Jones Machine Tool Co., Cincinnati, O.
Kinsey Co., E. A., Cincinnati, O.

Klauber Mch. Co., E. L., St. Louis
Lee Machinery Co., Inc., Detroit, Mich.

Little Co., W. F., Cleveland, O.
Lucas & Son, Inc., J. L., Bridgeport, Conn.

McCabe Lathe & Machinery Corp., J. J., 149 Broadway, New York

McDonald Machinery Co., St. Louis
McNullen Mch. Co., Grand Rapids, Mich.

Manning, Maxwell & Moore, Inc., 27 No. Jefferson, Chicago

Marr-Galbreath Mch. Co., Pittsburgh, Pa.
Marsh Mch. Co., A. R., Cleveland, Ohio

Midland Equip. Co., 612 Van Buren, Chgo.
Midwest Equip. Co., 1719 Van Buren Chgo.

Mid-West Machine Tool & Supply Company, Davenport, Iowa

Miles Machinery Co., Saginaw, W. S., Mich.

Mellor Mch. Co., Chas., 118 S. Clinton St., Chicago

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Morey and Co., Inc., 408 Broome St., N. Y.
 Motch & Merryweather Machinery Co.,
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 Nelson Machinery Co., Green Bay, Wis.
 Nilson Tool Works Co., Hamilton, O.
 Norton-Broadway Mch. Co., Cincinnati, O.
 O'Brien Machinery Co., Philadelphia
 Osborne & Sexton Machy. Co., Columbus, O.
 Oviatt & Co., D. C., Cleveland, Ohio
 Pacific Machinery Co., Cincinnati, O.
 Reed-Prentice Corp., Worcester, Mass.
 Reeve-Fritts Co., 37 S. Desplaines, Chicago
 Reliance Mch. Sales Co., Pittsburgh, Pa.
 Riverside Machinery Depot, Detroit, Mich.
 Rosenfeld Mch. Co., 942 W. Lake St., Chgo.
 Russell Machine Co., Pittsburgh, Pa.
 Saltzman B. L., 524 W. VanBuren St., Chgo.
 Scott-Barbach Mch. Co., 130 S. Clinton,
 Chicago
 Selfrest-Elsard Machinery Co., Dayton, O.
 Severin-Strafer Machinery Corp., 50 Church
 St., New York
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 Winterer, Herman L., Philadelphia

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Armstrong Bros. Tool Co., 808 N. Francisco
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 Central Distributing Co., Detroit, Mich.
 Graham Mfg. Co., Providence, R. I.
 Marsh Machinery Co. A. R., Cleveland, Ohio
 Martin Tool & Die Works, J. E., Springfield, O.
 Sheldon Machine Co., 2253 Cottage Grove
 Ave., Chicago

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Western Tool & Mfg. Co., Springfield, O.

Vises, Milling Machine

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 New York

Vises, Shaper

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Taylor-Winfield Corp., Warren, O.

Welding Head, Seam, Electric

Welding Appliance Co., 2111 W. Lake St.,
 Chicago

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 Towler Mfg. Co., John T., Cincinnati

Worms

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Greene, Tweed & Co., 109 Duane St., N. Y.

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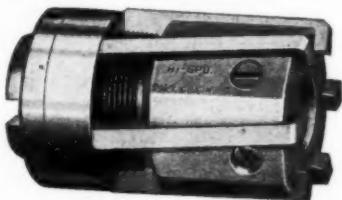
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Grinder, No. 3 Brown & S. univ.

Grinder, No. 1 Norton univ. cutter.

Grinder, No. 2 Gardner disc, m. d.

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Miller, No. 3 Cincinnati plain, m. d.

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Press, No. 5 Toledo o. b. i., flywheel.

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43"x17' 4" Bement-Miles.
37"x14' Johnson d. b. g., q. c. f., t. a.
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27"x12' Bullard.
26"x11' Wickes, q. c. g.
28"x10' Niles, q. c. g.
19"x10' Draper, patent head.

18" x 7' Chard, d. b. g., semi q. c. g.
15" x 8' Sidney, q. c. d. b. g., t. a.
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14" x 6' Lodge & Shipley, patent head, taper, pan bed.
14" x 8' Lodge & Shipley, q. c.

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3x28" Pond, triangle.
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48" Almond, sens. radial, post type.
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20" Champion, motor driven.
20" Aurora, b. g., p. f.

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No. 3 Brown & Sharpe, plain, cone type.
No. 3 Hendey, q. c. g.

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No. 3 Becker-Brainard, new model, q. c. g., vertical attachment.
No. 3 Becker universal milling machine.

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48"x48"x12' Gray, 2 heads.
48"x36"x14' Cincinnati, 4 heads.

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15" Lodge & Davis shaper.

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Boring mill, car wheel, 60" Newton.
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Hammers, 60 lb. Bellefonte upright, 2.
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Riveter, air, 6" Allen, cap. 1 1/2".
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Rolls, 4" drop end corrugated.
Saw, Q. M. & S. No. 4-B universal, 33" blade.
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No. 2B Kearney & Trecker univ. Nos. 3 & 4 Becker vertical.
No. 3 Kempsmith universal. 30"x8' Beaman & S. vert. and horiz.
No. 2 Brown & S. univ. light type. planer type.
No. 2 Rockford universal. 30" Bullard vertical turret.
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20"x10' LeBlond, q. c. g., taper. 16"x6' Cincinnati, q. c., taper.
16"x9' 10" Hamilton, q. c. g. 16"x8' Bradford, q. c. g.
18"x10' Davis, q. c. g. 16"x6' Sidney quick change gear.
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20" Cincinnati, geared crank. 14" Smith & Mills, crank.
17" Smith & Mills, crank. 14" Hendey, tight and loose pulley.

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Boring mills, 30" to 16".
Boring mill, 30" Rogers.
Brake, 8"x16 ga. Robinson.
Brake, 10" 6" Ohl, 10 ga., press type.
Bulldozer, No. 4 Williams & White.
Bulldozer, No. 25 W. & W.
Drills, 14" to 38".
Drill, No. 2 Colburn.
Drill, mult., No. 5 Fox, 10-spindles.
Drill, radial, 6" Prentice, s. p. d.
Flanger, McCabe, 1" capacity.
Gear cutters, spur and bevel.
Gear hobber, 96" Gould & E.
Gear planer, 24" Gleason, bevel.
Grinder, dbl., 14"x14", 220 v., 3-60.
Grinder, 12"x96" Norton, b. d.
Grinder, No. 14 Besley.
Grinder, disc, No. 52 Besly.
Grinder, planer type, 51" Springfield.
Grinder, No. 22 Heald surf., 12" chk.
Grinder, No. 16 Blanchard.
Hammer, 75 lb. Bradley upr. helve.
Hammer, 80 lb. Bradley, cush. helve.
Hammer, 100 lb. Bradley, upright.
Hammer, 150 lb. Dupont, upright.
Hammer, 200 lb. Beaudry, upright.
Hammer, 2-B Nazel.
Hammer, No. 5-N Nazel, m. d.
Hammers, steam 600 lb. to 3000 lb.
Hammer, 1000-lb. Chambersburg.
Keyseater, No. 2 Mitts & Merrill.
Lathes, 12" to 60".
Lathe, 18"x8" Rockford.
Lathe, 19"x12" Sidney, q. c. g.
Lathe, 24"x10" Pittsburgh.
Lathe, turret, 26" Libby.
Lathes, turret, No. 4 W. & S.
Miller, plain, No. 3-B Brown & S.
Miller, No. 25 Becker, plain.
Miller, univ. No. 2 Hendey, s. p. d.
Miller, univ. No. 3 Brown & S.
Miller, slab, 24"x20"x14" Ingersoll.
Pipe machines, 24" to 12".
Planer, 36"x36"x16" N-B.-P. like new.
Planer, 42"x42"x12" Cincinnati, 2 hds.
Planer, 96"x96"x20" Pond, 4 hds., m. d.
Planer, 42"x42"x12" Detrick & H. o. a.

Planer, rotary, 48" Newton.
Press, geared, No. 34 Toledo.
Press, No. 374 Bliss, s. s., 6" stroke.
Press, No. 3 Bliss, portable.
Press, No. 58 Bliss, s. s.
Press, No. 734 Bliss, s. s.
Press, No. 744 Bliss, s. s.
Press, No. 584 Toledo.
Press, toggle, No. 165 Toledo.
Press, wheel, 150-ton Caldwell.
Punch, hor., Cleveland, 1" thru 1".
Punch No. 2 L. & A. 12" thr. arch jaw
Punch & s., L. & A. 30" thr., 14" thru 1".
Punch and shear, No. 14 W. & W., d. c., 14"—1".
Riveter, Hanna, 18" thrt., 15" gap.
Riveter, stake, No. 6 Whiting, 48" thrt.
Rolling mill, 18" Standard.
Rolls, 14"x20" Ajax.
Rolls, angle bending, 2"x14" Bertsch.
Rolls, bending, 42" Bertsch.
Rolls, bending, 10"x14" Wickes.
Rolls, straight ng, 36"x16 ga., 17 r.
Saw, cold, 24" Hunter high speed.
Saw, cut-off, Yates double end, new.
Saw, hack, No. 7 Atkins.
Sandslinger, 11' tractor type.
Shaper, 16" Smith & Mills, b. d.
Shaper, 24" Stockbridge, b. d.
Shear, angle, L. & A., 6"x6"x14"
Shear, alligator, Badger, 1" square.
Shear, alligator, Garrison, 14" sq.
Shear, alligator, No. 5 Canton, 3" sq.
Shear, alligator, Mesta, 5"x3".
Shear, bevel, Lennox 4".
Shear, guil. No. 0 H. & J., 14" round.
Shear, plate, 10"x14" Bertsch, 15" thrt.
Shear, plate 10"x14" Morgan, 24" gap.
Shear, plate, No. 7 H. & J., 144"x14", m. d.
Shear, plate, No. 64 Hilles & Jones 112"x1", m. d.
Shear, rotary, No. 3 Quickwork 1".
Shear, rotary, No. 6 Quickwork 1".
Shear, squa. 12"x14 ga. Peerless.
Shear, sq., 10"x3/16" W. & R., m. d.
Shear, squar. 42"x3/16" Canton, b. d.
Straightener, bar, No. 4-D K. & R.
Straightener, beam, No. 4 H. & J.
Swaging machine, 1" Langelier.
Testing machine, 100,000 lbs.
Welder, Gibb spot, 1", 32" thrt.
Upsetters, 14" to 5".
Upsetter, 14" Acme.
Upsetter, 4" Acme, steel frame.

USED AND REBUILT MACHINERY

FOR SALE BY

Syracuse Supply Company. 314 W. Fayette St., Syracuse, N. Y.

Guaranteed NEW MACHINES in original crates at prices below list:

Pipe machine, No. 70 Forbes.
Shaper, 20" Whipp, back geared.

Straightener, No. 24 Corey.

Exceptional values in USED TOOLS:

Band saw, 36" Fox, tilting table.
Bending machine, Champion.
Bolt threader, Acme 2-spindle, with one head, 4" capacity.
Boring mills, Lucas No. 21, (2).
Drill press, 22" Prentice, rebuilt.
Grinder, 24" Safety Emery Wheel Co. snag grinder.
Grinder, Blount 1 1/2 x 14 wet tool, m. d.
Lathe, 20" x 12' Reed.
Lathe, 12" x 4' Hendey, q. c. g.
Lathe, 8x60 Fitchburg lo-swing.
Miller, No. 5 Becker vertical.
Millers, Wisconsin hand, (3).

Planer, 30" x 30" x 16' L. W. Pond.
Radial, 5' Pond.
Radials, 5' Dreses, single pulley drive, gear box, (2).
Rip saw, No. 24 Powers, self feed, power.
Screw machine, No. 24 Garvin.
Thread miller, No. 12 Lees Bradner.
Tilted turret, No. 6 Wood.
Turret lathes, No. 4 Foster, (2).
Turret lathe, No. 3 Cincinnati Acme.
Turret lathe, 24x26 Pratt & Whitney.
Turret lathe, 21" Gisholt.
Turret lathe, 24" Steinle.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 N. 12th St.,

St. Louis, Mo.

HAMMERS.

No. 5-B 500-lb. Nazel motor-driven.
2000 lb. Niles steam.

60 lb. Bradley helve.

LATHES.

60"x12' New Haven turning lathe.
26"x12' Ffield, heavy pattern.
24"x10' LeBlond, p. c. g.
20"x16' Monarch gap lathe.

18"x 8' LeBlond, q. c. g.
15"x10' Cisco, q. c. g.
14"x 6' Flather, q. c. g.
Fitchburg Lo-Swing, 12' bed.

PLANERS AND SHAPERS.

24"x24"x 6' Powell.
30"x30"x 8' Cincinnati.
36"x36"x18' Hamilton, motor drive.
42"x42"x12' Powell, 3 heads.
36"x36"x12' Cleveland openside.
48"x48"x16' Niles, box table.

16" Whipp shaper.
20" Whipp shaper.
20" Smith & Mills, shaper, b. g.
24" Flather shaper, b. g.
24" Gould & Eberhardt shaper, b. g.

MILLERS.

Hendey, Lincoln type.
No. 7 Becker, Lincoln type.
No. 1 1/2 Brown & Sharpe plain.

No. 1 1/2 Rockford plain.
36"x30"x8' Ingersoll slab.

DRILLING MACHINES.

3' Dreses radial.
4' Cincinnati Bickford.
32" Mechanics drill.

22" W. F. & John Barnes.
20" Champion.

GRINDERS.

14"x36" Landis universal.
8" Heald rotary, magnetic chuck.

No. 50 Gardner disc, 30" capacity.
No. 6 Besly double disc.

BORING MILLS.

No. 1 P. & H. horizontal drill.
42" Niles, 2 heads.

81" Baush, 2 heads, heavy.

SCREW AND TURRET MACHINES.

3"x24" J. & L., geared head.
No. 6 Warner & Swasey cone head.

3"x36" J. & L., geared head.
2" Warner & Swasey hollow hex.

TRAVELING CRANES.

15 Hand, cranes 14' to 42' span.

3 yard jib cranes with guy ropes.

MISCELLANEOUS.

Forging mch., 24" Acme, steel bed.
Furnaces, cyanide hardening.
Presses, Lourie hydraulic, 20 & 30 ton
Punch, horizontal, 1" in 1".
Punch & shear, Cleveland 42" throat.
Rotary planer, 44" and 48".

Sand slinger, Beardsley & Piper,
No. 18, type P.
Shear, Lennox, rotary bevel.
Slotter, 13" Niles.
Swager, No. 1 Dayton.

USED AND REBUILT MACHINERY

FOR SALE BY

Foster Machinery Company, 10203 Quincy Ave., Cleveland, O.

12"x14 ga. Loy & Nawrath.

MISCELLANEOUS.

Automatic, No. 24 New Britain.

Band saw, 24" woodworking.

Drill, multiple-spindle Bausch,

No. 3 Morse taper.

Drill, 14" Allen, ball bearing.

Canton alligator, cap. 14' sq.

Drill, 4' Mueller radial.

Press, No. 6 Niagara.

Punch, E.F. Cleveland, 72" thrt., m.d.

Riveter, High Speed 2A.

Upsetter, 34" Acme.

FOR SALE BY

Marr-Galbreath Machinery Co.,

Air compressor, 12 cu. ft. Natl. belt.

Air compressor, No. 4 Curtis (new).

Air compressor, 25 cu. ft. Caldwell.

Air comp. 8x6, dble cyl.

Arbor presses, Nos. 0, 1, 2 & 3.

Band saw, 36" cross-cut (Wood).

Bender, angles, hand, No. 9 Buffalo.

Bolt cutter, 14" Morgan, double hd.

Bolt cutter, 14" Acme, triple head.

Boring mill, 42" Bullard, 2-heads.

Boring mill, 51" Bullard, 2-heads.

Brake, 8"x10 ga. D. & K. hand grd.

Cold saw, 5" Vandyke.

Cold saws, Nos. 11 1/2 and 12 Higley.

Derrick, steel, stiff lg. 15-ton, 60' boom.

Die sinker, Jackson, 48"x13".

Draw bench, Oliver 6' belted.

Drill, 10" Bench, with motor.

Drill, 20" Champion, b. g., p. f.

Drills, 26" Barnes, b. g., p. f.

Floor crane, 4000 lb. cap., (hand).

Forging mach., 3" Acme, steel, m. d.

Forging and rivet header, 1" Ajax.

Gear and pinion cutter, No. 3 Sloan

& Chace.

Grinder, No. 1 Norton univ. t. & c.

Grinder, No. 18-D Rowbottom.

Grinder, No. 60 Heald, 19" arm.

Hack saw, Atkins, cap. 8"x8".

Hack saw, 9x9 Peerless, belt.

Hack saws, Nos. 1 & 2 Marvel.

Hammer, 2500 lb. Chbg., a. f. steam.

Hammer, 8000 lb. Chbg. dbl. frame.

Hammers, stm. s. f. 600, 1100, 1500 lbs.

Hammers, 40 lb. Bradley.

Hammer, 250 Chbg. board drop.

Jointer, bench, Oliver, 6" belt.

Keyseater, No. 2 Davis.

Keyway cutter, 24" Morton, cap. 2 1/2".

Lathe, 6"x24" Wade, bench.

Lathe, 9" Hardinge, turret, bench.

Lathe, 9"x40" Barnes (A-1).

Lathe, 14"x6" Hendey, q. c. g., t. a.

Lathes, 17"x6" R-L., q. c. g.

Lathes, 18"x8" R-P., geared head.

Lathe, 18"x8" Cisco, q. c. g.

Lathe, 18"x9" Lehman, q. c. g. t. a.

Lathe, 18"x12" Lodge & Shipley q. c.

g., t. a.

Lathe, 20"x10" Sidney, q. c. g., t. a.

Lathe, 35"x64" Bridgeford gum bor-

ing m. d.

58 Water St., Pittsburgh, Pa.

Lathe, 24"x10" Putnam, taper attach.

Miller, vert. No. 4-B Becker, for m. d.

Miller 3-H. LeBlond, univ.

Miller, No. 3-B Milwaukee, s. p. d.

Miller, pl. No. 2 Cincinnati, cone.

Miller, No. 0 Kempsmith univ.

Miller, duplex Knight, table 8 1/2"x32".

Motor, 3 h. p. 1/60/110-220/1200 rev.

Motor, 15 h. p., 220 v. d. c., 300/1200 rev.

Motors, 20 & 50 h. p., 3/60-220/900.

Oil separators, 4 & 14 bu. cap.

Pipe machine, 4" Williams, m. d.

Planer, 36"x36"x8" L. & L., 2-heads.

Press, No. 14 Stiles (Bliss) plain.

Press, 52 Ferracuta, punch.

Press, D. G. 63, Ferracuta, s. s.

Press, No. 19 1/2 Bliss, o. b. i., a. c.

motor, new.

Presses, 19 & 19 1/2 Bliss, o. b. i.

Presses, No. 87 Niagara, screw.

Punch, 30" thrt., 1"x1" m. d., s. e.

Punch, horiz., 1 1/2"x1 1/2" tht, m. d.

Punch & shear, 36" Cleve. e. f. a. j.

Punch and shear, s. e. 6" thrt. 2x3.

Punch, coping, steel plate, 12" thrt.

36" die space, 2 holes 1"x1", m. d.

Radial drill, 3" Dreses, t. a.

Radial drill, 2 1/2" Fosdick, t. a.

Riveter, Allen jaw, 36" cap. 1 1/2".

Riveter, No. 107 Grant, for m. d.

Riveter, 1 1/2" Shuster rotary, belt.

Saw, Burke, 12" blade, capacity.

Saw table, No. 260 F. & E., (wood).

Screw mach., 10" P. & W. pl., w. f.

Shaper, 7" Rhodes, vise.

Shaper, 6" Pratt & Whitney.

Shaper, 14" Springfield, crank.

Shaper, 26" Smith & Mills, b. g., cr.

Shaper, 24" Jungst., b. g., crank.

Shaper, 24" Niles-Bement-Pond, cr.

Shear, 10-P. Lennox serpentine.

Shear, alligator, 1 1/2" round.

Shear, rotary, 12" thrt., cap. 22 ga.

Shear, rotary bevel, Lennox 4" m. d.

Shear, rotary bevel, 3", m. d.

Shear, squaring, 8"x14 ga. power.

Shear, squaring, 60"x18 ga. Niagara.

Turbo compres., Spencer 5400 c. f. m.

Turret lathe, 13" Gisholt, 2 1/2" h. s.

Turret lathe, 2"x24" J. & L., s. p. d.

Turret lathe, 18" W. & S. friction hd.

Wheel press, 200-ton Niles hyd., 46".

USED AND REBUILT MACHINERY

FOR SALE BY

Arthur C. Badger Metal Products Co.
962 Park Square Bldg., Boston, Mass.

OVEN FURNACE

One Stewart oven furnace, 48" wide, 36" high, 54" deep, 6" opening with cover in door, heated by gas. In good condition, practically unused.

FOR SALE BY

Fitchburg Grinding Machine Corporation, Fitchburg, Mass.

LATHES.

Putnam 14"x6". Perkins threading 21"x10".
 Greaves-Klusman 18"x8". New Haven 32"x12".

PLANERS.

42"x36"x22' Whitcomb. 17"x20"x8' Whitcomb.
 32"x26"x16' Whitcomb, 2 heads. 30"x30"x8' Powell, 2 heads.
 22"x22"x6' Whitcomb.

TURRET LATHES.

24"x24" J. & L., chuck equipment. 24"x26" Greenlee.
 3x36" J. & L., chuck equipment, 16" Reed Prentice.
 double spindle. 21" Gisholt.

MILLERS.

No. 1 Steptoe.

BORING MILLS.

3"x24" Rockford.

24" Reed-Prentice.
 RADIAL DRILL.

24' Drees.

FOR SALE BY

Scott-Bansbach Machinery Co., 130 So. Clinton St., Chicago, Ill.

Auto. screw mach., B. & S. No. 19, h. s.	\$ 500.
Auto. screw mach., B. & S. No. 00, with slotting	450.
Auto. screw mach., B. & S. No. 00, without slotting	400.
Auto. screw mach., B. & S. No. 0, without slotting	500.
Auto. screw mach., Cincinnati, 5-spindle, 1"	900.
Auto. screw mach., Cleveland, 1", Model A	150.
Bolt cutter, 2" D. & H., double head	300.
Boring mill, Morris horiz., motor drive, 1-15/16" spindle	1,000.
Centering machine, Whiton swivel	75.
Drill, 1-spindle L-G 14", high speed, ball bearing	175.
Drill, 21" Cincinnati sta. head, with tapping attachment	200.
Drill, 4-spindle Allen, high speed, ball bearing	350.
Drill, radial, 3' American sensitive	200.
Drill, radial 3' American plain cone drive, with tapping attachment	600.
Drill, radial 3' Cincinnati Bick. plain gear box, with tapping att.	600.
Filing machine, Cochrane-Bly, floor type	100.
Grinder, No. 65 Heald, with fixtures, b. b. spindle	900.
Hammer, 50 lbs., No. 1 Standard drop	150.
Lathe, 18x12 Schumacher & Boye, quick change with chuck	500.
Lathe, 20x10 Bradford, with chuck	400.
Miller, Whitney, Standard and U. S., hand	125.
Miller, No. 3 Becker vertical, no rotary	325.
Miller, No. 5 Becker vertical, no rotary	500.
Miller, Ingersoll slab, 42"x36"x9'	1,750.
Oil separator, Curtis 1 bu.	100.
Planer, 24"x24"x8' American, 1 head self contained countershaft	600.
Planer, 24"x24"x8' American, 1 head self contained countershaft	650.
Planer, 32x32x8 Pond, 1 head	750.
Shaper, 24" Averbeck, balanced ram, vise, countershaft	800.
Shaper, 24" Rockford universal combination	1100.
Screw machine, P. & W. 1/4"x4, complete	150.
Turret lathe, 24" Steinlee, 3/4" hole, side carriage	700.

USED AND REBUILT MACHINERY

FOR SALE BY

Miles Machinery Co.,

Saginaw, W. S., Mich.

Automatics, 5A & 6A, P. & J.
Bending brake, 10' x 3/16" Chicago.
Compressor, 8x8 & 12x12 Curtis.
Die sinkers, Nos. 2 & 3 P. & W.
Drills, 21" & 24" Cincinnati.
Drill, radial, 3 1/2' American.
Gear cutter, No. 615 Fellows.
Gear hobber, No. 12 Barber-Colman.
Grinder, 14x72 Norton.
Grinder, surfacer, 8" & 12" Heald.

Groover, oil, No. 1 Fisher.
Hammer, 150 lb. Bradley.
Keyseater, No. 4 Mitts & Merrill.
Lathe, 36" x 16" Johnson.
Lathe, 24" x 10, Flather.
Mill, boring, 96" Betts.
Mill, boring, 75" Bullard.
Planer, 36" x 36" x 12' Cincinnati.
Press, No. 96 B Toledo.
Upsetter, 2" Acme.

FOR SALE BY

Severin-Strafer Machinery Corp., 30 Church St., New York City

BORING MILLS, VERTICAL.

60" Bullard, single pulley drive.
42" Bullard, turret head.
52" Niles-B.-P. turret & plain head.

72" N. B. P. single pulley drive.
96" Niles, belt drive.

BORING MILLS HORIZONTAL.

5" bar, No. 2 Barrett.
5" bar Newark, knee type.
5" bar Deitrich & Harvey, floor type.
4 1/2" bar Niles-B.-P., floor type.

4" bar Detrick & Harvey, floor type.
3" bar Lucas single pulley drive.
3" bar Betts, knee type.

MILLING MACHINES.

No. 3 Cincinnati, b. d.
No. 2-B heavy Brown & Sharpe.
No. 2A Hendy-Norton univ.

No. 4 Cincinnati, vertical.
Ingersoll 84" x 16'.

DRILLS.

5' Niles B. P., semi-universal radial, speed box drive, tilting table.
No. 25 Foote-Burt, heavy duty.

24" Aurora sliding head.
26" Prentice sliding head.
Bausch 16-spindle, 4" capacity.

HAMMERS

8000 lb. Chambersburg, d. f.
1600 lb. Waterbury-Farrel, b. d.
1100 lb. N. B. P. single frame, steam.
800 lb. Billings & Spencer, b. d.

600 lb. N. B. P. single frame, steam.
400 lb. Chambersburg s. f., steam.
400 lb. Bliss poppet board drop.
100 lb., 75 lb. 50 lb. Bradley compact.

LATHES.

57" x 27' Pond triple geared.
54" x 24' H. S. and M. quick change.
48" x 18' Fifeild t. g.
36" x 16" N. B. P., motor drive.
30" x 16" N. B. P., motor drive, d. c.
24" x 18" LeBlond q. c. & t. a.
24" x 14" Lodge & Shipley d. c. drive.

24" x 12' Reed-Prentice, g. h.
23" x 14' LeBlond, heavy duty.
18" x 18' Reed, belt drive.
18" x 8' Fairbanks, double b. g.
16" x 6' Putnam, rebuilt.
84" Niles slicing lathe.

PLANERS.

10' x 10' x 22' Sellers.
72" x 72" x 18 b. d. Deitrick & Harvey, 3 heads.
72" x 72" x 18' Pond, rev. motor drive.

60" x 48" x 14' Cincinnati, gr. box, m. d.
48" x 48" x 16' Cincinnati.
30" x 30" x 16' Gray, 3 heads.
22" x 22" x 4' Whitcomb, 1 head.

MISCELLANEOUS.

Bending rolls, 12' Niles, 3/4" cap.
Buffing jacks and wheels.
Chain blocks, 1-ton with trolleys.
Core wire straightener, 1/2" to 5/16".
Dragline, 160' boom, 4 yd. motor d.
Elevator, portable, 3' x 4' x 18'.
Gate shear, Morgan 2" 90" blade.
Gate-shear, 92" blade, 1" cap.
Gear cutter, No. 4-36" B. & S. auto.
Gear cutter, No. 2 Bilton.
Generator, 100 k. w., a. c. Deisel.
Grinder, 20x144 Landis plain.

Hydraulic forging press, 1200 tons.
Pipe machine, Saunders 6".
Planer drive, 20 h. p., 220 v., d. c.
Pumps, steam, 6x4x6 brass.
Pumps, steam, 8x12x12 brass.
Riveter, Hanna pneumatic, 168" reach.
Sand sling for large foundry.
Saw, Klem No. 1 band saw.
Shaper, 26" Cincinnati, trav. head.
Straightening rolls H. & J. 114".
Wheel presses, 300 and 150 ton.

USED AND REBUILT MACHINERY

FOR SALE BY

Bennett Machinery Co.,

Boring mill, 51" Bridgeport, 2 hds.
Boring mill, 42" Bullard, 2 hds.
Boring mch., 24" Fitch, knee type
Drill, mult. 6-sp. Baush, in circle.
Drills, 25" Snyder, tap; 20" Hoefler.
Gear cutter, 48" G. & E. spur.
Hack saw, 48" Goodell & Pratt.
Lathe, 26/48" x14" McCabe, dbl. sp.
Lathe, 28"x12" Boye & E. q.c., taper.
Lathe, 24/33"x14" Pond, belt.
Lathe, 24"x24" Schumacher & Boye.
Lathe, 24"x24" Schumacher-B., cone.
Lathe, 21"x16" Sidney, new.
Lathe, 19"x8" LeBlond, q.c.g., taper.
Lathe, 18"x16" Flather, q. c. g., cone.
Lathe, 18"x16" Prentiss, \$300.
Lathe, 18"x8" Whitcomb-B., q. c. g.
Lathe, 18"x8" Hollingsworth, q.c.g.
Miller, No. 3 Kempsmith plain.
Miller, No. 2 LeBlond, plain.
Miller, No. 1-A Milwaukee mfg., grd.
Miller, Model C Becker, vertical.
Miller, No. 3 B. & S. plain \$300.00.

30 Church St., New York City

Motor, 20 h. p. variable speed, 450/
1800 d. c.
Pipe machine, 8" E. C. & B., belt.
Pipe machine, 8" Jarecki, motor.
Pipe mch., 8" Saunders, belt dr.
Pipe machine, 6" Saunders 24-6".
Pipe machine, 6" Oster belt.
Pipe machine, 4" E. C. & B., belt.
Pipe mch., 4" Curtis & Curtis, mtr.
Pipe machine, 3" Jarecki No. 7B.
Planer, 30"x30"x16" Cincinnati, 2hds.
Punch, 24" L. & A. No. 4 s. e.
Punch, shear, angle cutter, etc.,
No. 27-U 30" Buffalo; No. 24-U
20" Buffalo combination.
Radial, 34" Hamilton, cone, tap.
Radial 34" Mueller, gear box tap.
Rotary Slitting Ring & Circle Shear,
No. 510 Niagara 4", 48" throat.
Saw, cold 22" blade Gleim, 6" cap.
Shaper, 24" Hollingsworth cone.
Shaper, 21" American, belt drive.
Shaper, 20" Gould & Eberhardt \$375.
Shaper, 16" Stockbridge, belt.

FOR SALE BY

McDonald Machinery Co.,

1531-33 N. Broadway, St. Louis, Mo.

Air compressors, Ingersoll-R. 5x7,
motor drive, Bury 12x12.
Arbor presses, Eames No. 6.
Baling press, Champion sheet metal.
Boring mills, 7 Bullard 42" low price.
Chain hoists, Yale & Towne 1 1/2 & 2-ton
Demagnetizer, Walker.
Drill, Baush 18-spindle.
Drills, Baker, heavy duty (2).
Drills, Leland-G 1-sp. h.s., b.b. floor.
Drills, H. & W., Kokomo 1-spdl.,
Sipp 1 & 2-spdl., h. s., b. b.
Drills, 20", 24", 26 & 28" b. g. & tap.
Furnace, Holcroft 92 k.w. annealing.
Grinder, Modern 8"x30".
Grinder, Heald No. 60 cylinder.
Grinders, modern internal; Blount
30", wet (3), Heald 8", mag. ck.
Grinders, St. Louis No. 9.
Hack saws, 4x4, 6x6 & 2 Racine Jrs,
Atkins 4x4"; Atkins 8x8 h. s.;
Marvel No. 2.
Hammer, Bement-Niles 1100 lb. st.
Lathes, Schumacher & Boye, 42"x16"
q. c. g.; Bridgeford 36"x12" q. c. g.;
South Bend 24"x14"; Davis 22"x10";
Whitcomb-Blaisdell 22"x8" q. c. g.
Amer. 20"x9"; Hendey 14"x6" q.c.g.
q. c. g.; Monarch 16"x8"; Porter-
McLeod 16"x6"; all q. c. g.; 40
other assorted sizes.
Milling machines, Kempsmith No. 2;
Ohio No. 20 plain. American No.
14 universal, Ohio 34; LeBlond
No. 3-H plain; Brown & S. No. 3

pl.; Becker No. 4-B vertical; B. &
S. No. 3 Bpl., s. p. d.; Kempsmith
No. 3 universal; No. 1 Kempsmith
plain; Becker No. 2 vertical.
Pipe machine, Curtis 3", motor dr.;
Merrill 4" belt drive; B. & K. 8".
Planers, Gray 28"x25"x6", 1 head;
Cincinnati 36"x36"x18" 2 heads;
Pond, 36"x36"x12" table, 18" bed,
2 heads.
Punches, W. & W. No. 17 punch.
Punch presses, Swaine Nos. 27, 29,
31, 33 & 55 Willard No. 4-A o. b. i.
Bliss No. 19 o. b. i., (2), Bliss
No. 3; Federal Nos. 1 & 2.
Pyrometer, Thwing elec., with rec.
Rivet spinner, Grant.
Rolls, Badger 50" Pyramid power
rolls, 3" dia. 1" cap.
Screw machine, Gridley 1-spdl. 24"
auto.; Cleveland 1 1/2" auto.; W. & S.
No. 2 hand; P. & W. No. 2 1/2 hand;
Foster No. 3 hand; Woods No. 2
tilted turret head; Bardons & O.
No. 7; National-A. No. 52 auto.,
4-sp., m. d. B. & S. No. 60 auto.
Shapers, Cinti. 20", b. g.; Ohio 20";
Ohio 16"; American 16" b. g.; S.M.
16"; Steptoe 14" Barker 24" b. g.
24" Queen City 24" b. g.; Barker
18" b. g.; American 18" b. g.
Shears, 60" thrt. rotary slitting, (2).
Turret lathe, Warner & S. No. 2-A.
Welders, butt, Federal, 1" rds.

USED AND REBUILT MACHINERY

FOR SALE BY

Taylor-Hall Welding Corporation, 99 Hope Ave., Worcester, Mass.

BUTT AND SPOT WELDERS

Guaranteed to be in perfect condition.

Thomson 111 spot welder.
Thomson 2A butt welder.
Thomson No. 3 butt welder.
Thomson 7AA auto. butt welder.
Thomson 21 automatic butt welder.

Thomson 170 spot welder.
Thomson 40-A vert. butt welder.
Thomson 20-A vert. butt welder.
Toledo 10-B butt welder.

FOR SALE BY

Rosenfeld Machinery Co., 942-944 W. Lake St., Chicago, Ill.

Broaching machine, No. 2 LaPointe (New London), with broaches.
Grinder, No. 10 Besly disc.
Milling machine, No. 2 Cincinnati universal, complete.
Milling machine, 1B Milwaukee, single pulley drive with vise.
Miller, Becker vertical, Model CS, rotary table.
Motors, $\frac{1}{2}$ h. p. to 100 h. p., a. c. and d. c.
Punch press, 1-4P style, solid back.
Vises, 100 new Rock Island, all sizes.

FOR SALE BY

Davis Machinery Exchange, 1-3-5 So. St. Clair St., Toledo, Ohio

Air compressor No. 12 Ingersoll-R.
Air compressor, 8x8 Union.
Band saw, 10" Napier metal cutting.
Band saw, 9" H. & R. metal cutting.
Bolt threader, 1 $\frac{1}{2}$ " Landis, sq. head.
Bolt threaders, 1 $\frac{1}{2}$ " and 2" National.
Brake, 96" Niagara hand, 18 gauge.
Brake, 96" Geo. A. Ohi hand power, geared, 3/16" capacity.
Centering mche., Whiton, dbl. end.
Chucking machine., No. 33 New Britain automatic.
Drill 24" Superior, sl. hd., b. g., p. f.
Drill, 20" Barnes camel back, single spindle, all geared.
Drill, 6-sp. Nat. Acme horizontal.
Drill, 6-spindle Foote-Burtsensitive.
Drill press, 24" Fosdick-Holloway radial, tapping attachment.
Forming rolls, 42" Bertsch power, slip end.
Grinder, 10"x36" Norton. plain
Grinder, 12"x36" Modern plain, self-contained countershaft.
Grinder, No. 1 Greenfield plain.
Grinder, No. 1 LeBlond tool & cut.
Grinder, No. 1933" Besly vert. disc.
Grinder, No. 10 Besly disc, 16" disc.
Grinder, 8"x18" Ott.
Grinder, No. 60 Heald cylinder.
Grinder, No. 1 Fraser cylindrical.
Hack saw, 6"x6" Marvel power.
Hack saw, 6"x6" Racine power.
Hammer, No. 14-B High Speed riveting, m. d.
Keyseater, No. 0 Mitts & Merrill.
Keyseater, No. 2 Davis.
Lathe, 14"x6" Monarch, q. c. g., ck.
Lathe, 14"x6" American, q. c. g., chuck
Lathe, 14"x6" Walcott, q. c. g., chuck.

Lathe, 20"x10" Draper, l. c. g., chuck.
Lathe, 24"x10" Hendey, q. c. g., yoke head.
Mill, No. 3 Kemp Smith plain.
Mill, No. 3-B B. & S. plain, s. p. d.
Mill, No. 2 Cincinnati Hi Power plain, s. p. d.
Mill, No. 5 Becker vertical.
Mill, No. 20 Garvin vertical.
Miller, Fox hand.
Miller, No. 6 Whitney hand.
Milling & drill. mch., No. 14 Knight.
Press, No. 8 Rockford s. s. flywheel.
Press, No. 2 Toledo o. b. i. flywheel.
Press, No. 14 Stoll o. b. i. flywheel.
Press, No. 3 Toledo o. b. i. b. g.
Press, arbor, No. 28 Atlas.
Press, arbor, No. 3 Greenerd.
Saw table, No. 3 Crescent, tilting table, revolving arbor.
Screw machine, Garvin hand.
Screw machine, 14"-14" Cleveland automatic, model A.
Shaper, 16" Smith & Mills crank.
Shaper, 20" Mattison crank, b. g.
Shaper, 24" Rockford crank, b. g.
Shaper, 26" Smith & Mill crank, b. g.
Shaper, 28" Ohio crank, b. g.
Shears, 36" Niagara square foot pwr.
Shears, Quickwork rotary.
Slitter, gang, No. 513 Toledo, 36"x18 gauge.
Squaring shears, 11"D. H. Stoll 14 ga.
Tapper, No. 1 Garvin vertical.
Turret lathe, No. 3 Foster, q. f. h.
Turret lathe, No. 7 Foster, power feed to turret and cross slide.
Welder, Taylor spot, 50 k. w., 60 cy., 440 v.

USED AND REBUILT MACHINERY

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.

Automatic, 7-A Potter & Johnson.
Die filer, No. 1 and No. 3 Barry.
Drill, 24" C. & O. plain, radial.
Drill, 20" Barnes, all grd.
Drill, 6 spindle Barr, 1/2" cap.
Gear cutter, No. 98 G. & E. spur & b.
Grinder, Heco surface, 16"x24" table.
Lathe, No. 4 Elgin preci., with bench
Lathe, 10"x5' P. & W., tool makers.
Lathe, 11"x5' Barnes, c. r.
Lathe, 16"x9' Flather, q. c. g.
Lathe, 20"x8' Bradford.

Lathe, 24"x12' Peerless, c. r.
Miller, No. 2 Rockford, plain.
Miller, No. 3 Rock'd hand, vert. hd.
Miller, No. 2 Ford-Smith universal.
Miller, No. 00 B. & S., hand.
Planer, 24"x24"x6' Rockford.
Press, No. 3-P Am. Can solid bk.
Press, No. 1 Massillon trim.
Press, No. 0 LaSalle bench.
Shaper, 7" Rhodes crank.
Shop saw, 6x6 Racine h. s.
Shop saw, 6x6 Peerless h. s.

FOR SALE BY

M. A. Wertman Machinery Co., 427 Penton Bldg., Cleveland, Ohio

Bolt cutter, 24" Landis with dies.
Boring mill, 52" Niles 2 swivel heads, single pulley drive.
Boring mill, 52" Gisholt 2 swivel heads, single pulley drive.
Boring mill, 42" Bullard, 2 swivel heads, self contained c. s.
Brake, 8"x1" Robinson, new condition.
Drill, 3 1/2" Hamilton radial.
Drill, 5" American radial, motor drive.
Milling machine, Milwaukee No. 1 1/2 A plain, single pulley drive.
Milling machine, Brown & Sharpe No. 0Y plain.
Miller keyseat, Burr No. 5, 60" table, routing attachment, perfect.
Press, Bliss No. 3 1/2 B toggle, draw and lift-out 10 1/2".
Press, Toledo No. 165 toggle, draw and lift-out 8 1/2".
Press, No. 2 Minster o. b. i.
Polishing lathes, Frankfort double end, b. b., 1 1/2" spindles, (10).
Shaper, 24" Cincinnati, very good.
Shaper, 15" Hendey A No. 1 condition.
Turret lathes, Gisholt 21", 3 1/2" hole in spindle (5).
Turret lathe, Libby 18" heavy turret lathe, single pulley drive.
Turret lathes, Warner & Swasey No. 6 g. f. h. turret lathe (2).
Turret lathe, Warner & Swasey No. 4 universal turret lathe, cone type.

FOR SALE BY

Brown Machinery Co.,

2323 N. 9th St., St. Louis, Mo.

Blowers, Nos. 3, 7 and 9 Sturtevant;
Nos. 4 and 2 Root.
Buffer, Hisey 3 hp., 3-ph., 220 v.
Drills, 21" C-O and Champion; 22"
and 25" Barnes; 24" Cincinnati.
Drills, radial, 2 1/2" American 3' American, sensitive; 3 1/2" Fosdick.
Drills, hor. radial, Nos. 2 & 3 Barnes.
Grinders, emery, St. Louis & W.;
large stock new at 50% disc.
Grinders, disc, No. 6 Besly and 14
Gardner.
Grinders, drill, W. & M.; American.
Grinders, plain, 10x36" Norton;
8x36" B. & S.
Grinders, universal, Nos. 3 Ohio
and 12 B. & S.
Hammer, helve, 40 lb. Bradley.
Lathes, turret, 16" Gisholt, Fulton,
Omar, Foster, J. & L.
Lathes, No. 5A Potter & Johnston.
And many others.

Lathes, 14" C-J; 16" Monarch; 18"
Monarch; Lodge & Shipley; Fay
& Scott; 20" L. & S.; 24" F. & S.;
26" Whitcomb-B.; 36" American.
Millers, No. 4 Hendey and No. 3B
Owen, plain.
Pipe machine, No. 2 B. & K.
Planers, 30" Whitcomb; 60" Niles,
42" Pond.
Presses, arbor, No. 15 Greenerd.
Presses, No. 5 S. & P. grd.; L. & J.
o. b. i., No. 6 Niagara, geared.
Presses, hydraulic, 36x72" Elmes.
Profilers, Putnam; Reed-Prentice.
Punch and shears, No. 6 L. & A.
12" thrt.; No. 17 W.-W.
Riveter, 1/2" Adt.
Shaper, 14" Barker.
Shears, rotary splitting, No. 134
Marshalltown 4" thrt.; 1/2" cap.;
No. 13 Pettingell.

Write for list 130.

USED AND REBUILT MACHINERY

FOR SALE BY

The O'Brien Machinery Co.

113 N. Third St., Philadelphia, Pa.

Boring mill, No. 1½ Beaman Smith horizontal, floor type, 3½" bar.
Drill, 32" Aurora, motor driven.
Drill, radial 2½" Morris s. p. dr.
Gear cutter 30" Whiton, belt.
Grinder, 12"x36" Cincinnati univ.
Grinder, 14"x96" Norton plain, belt.
Grinder, No. 2 Norton universal.
Hammer, 2000 lbs. Chambersburg, double frame, steam forging.
Hammer, 1100 lb. N. B. P., sgl. fr.
Hammer, 600 lb. Bement sgl. frame.
Hammer, 100 lb. Beaudry belt.
Lathe, 20"x8" American, belt drive.
Lathe, 30"x30" Harrington.
Lathe, 43"x12" Harrington, belt.
Miller, Newton duplex, planer type, table 21"x12".
Miller, No. 4 LeBlond h. d., plain.
Milling mch., No. 3 Garvin duplex.
Pipe machines, 2", 4", 6", 8" & 12"
Oster, Cox, Williams, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, comp. stock.

Pipe machine, 2" Landis, belt.
Pipe machines, Oster portable, gas drive, all sizes.
Planer, 36"x36"x24", Bement, 4 hds.
Planer, 36"x36"x12" Cincinnati, 2 hds.
Planer, 54"x54"x30" Sellers, 4 heads.
Press, No. 734 Bliss trimming press.
Press, No. 37 Niagara, 1100 lb. fly-wheel, solid back.
Press, hydraulic wheel, 100 ton, 33" between bars.
Press, hydraulic flanging, 150 ton Chambersburg, 54" throat.
Punch, No. 2 Hilles & Jones, 20" thrt., motor driven, cap. 1" in 1".
Rolls, 6" Beloit, ½" cap., belt.
Saw, 13"x16" Peerless hack saw.
Saw, 16" Higeley cold, cap. 4".
Saw, 30" Espen-Lucas, cap. 8".
Shaper, 18" Cincinnati, one traveling head, 2 tables.
Shapers, 20" Stockbridge, with speed box, (2).
Shear, Buffalo bar, cap. 2" round.

FOR SALE BY

Randle Machinery Co.

1733 Powers St., Cincinnati, Ohio

Bending rolls, 5"x1" capacity.
Bending rolls, 8"x5/16" Bertsch, m. d.
Bending rolls, 10"x1" cap.
Bend. rolls, 3"x48" Niagara slip form.
Bolt cutters, 4" Acme, m. d.
Boring mill, 36" Bullard, r. p.
Boring mill, 42" Bullard.
Boring mill, 60" Bullard.
Boring mill, 86" Niles.
Boring mill, 96" Bickford.
Boring mill, 2½" Cleveland horiz.
Brake, 6"x14 ga. Pexto hand power.
Brake, 8"x10 ga. Robinson, m. d.
Brake, No. 3B Chicago, hand power.
Grinder, No. 2 B. & S. surface.
Grinder, No. 8 Badger, m. d.
Grinder, No. 19 Besly, m. d.
Hack saw, 6x6, Racine & Peerless.
Hack saw, 9x9 Acme.
Keyseater, No. 9 M. & M.
Keyseater, No. 1 Baker.
Keyseater, No. 3½ Baker.
Keyseater, No. 1 Davis.
Lathe, 14x6 LeBlond, rapid pro.
Lathe, 16x8 Morris q. c. g. h.
Lathe, 18x10 Morris, q. c.
Lathe, 17x16 Sidney, q. c.
Lathe, 25x10 LeBlond, q. c.
Lathe, 24x10 L. & S., q. c.
Lathe, 24x10 Rahn-Larmon, q. c.
Lathe, 36x16 Fay-Scott l. c.
Lathe, 36x30 Niles l. c.
Lathe, 30x20 Ames l. c.

Lathe, 44x22 Fifield, l. c.
Lathe, 54x27 Pond, lathe.
Lathe, 44x24 Bradford.
Miller, No. 1½ Cincinnati plain.
Miller, No. 2 LeBlond plain.
Miller, No. 3 B. & S. vertical, r. t.
Planer, 32x32x6 Gray, 1 head.
Planer, 36x38x8 D. & H. openside.
Planer, 36x36x12 Gray, 2 heads.
Planer, 36x36x10 Powell, 2 heads.
Planer, 48x48x14 Gray, 3 heads.
Planer, 72x72x18 D. & H. openside.
Pipe machine, 2" & 6" Saunders, b. d.
Pipe machine, 8" E.-C.-B.
Pipe machine, 12" Williams.
Radial drill, 2½" Dreeses, belt dr.
Radial drill, 3" Morris plain g. b.
Radial drill, 4" Morris plain g. b.
Radial drill, 4" Bickford plain g. b.
Shear, 10"x14 ga. Bertsch.
Shear, No. 662 Robinson, m. d.
Shear, No. 41 Beloit, m. d.
Shaper, 14" and 18" Steptoe plain.
Shaper, 16" Cincinnati, b. g.
Shaper, 20" Queen City, b. g.
Shaper, 16" and 28" new Queen City
Shaper, 24" Barker, b. g.
Turret lathe, 24" Gisholt, b. d.
Upright drill, 20" b. g.
Upright drill, 24" American b. g.
Upright drill, 30" Weigle.
Wheel presses, 200 ton N.-B.-P., 300 ton Thomas; 400 ton Caldwell;

Send us your inquiry for the machine you need, whether listed above or not.

USED AND REBUILT MACHINERY

WANTED BY

Box 48, Care Hitchcock Pub. Co., 508 S. Dearborn St., Chicago
MILLING MACHINES.

We are in the market for Nos. 5C and 6 Becker vertical millers, late type;
 give price, serial number, equipment, condition and location.

FOR SALE BY

B. L. Saltzman, 524 W. Van Buren St., Chicago, Ill.

PUNCH PRESSES.

No. 3 Niagara, o. b. l.	No. 2 Walsh.
No. 2 American Can.	No. 10 Torris and Wold.
Bench punch presses all sizes.	

LATHES.

Flather 18x5, q. c. g.	Rockford 11x5.
Flather 9x5.	Sidney 14x6, q. c. g.
Rockford 14x6, q. c. g., tool room.	South Bend 15x6.

SHAPERS.

20" Hendey, friction drive.	12" Springfield crank.
-----------------------------	------------------------

DRILL PRESSES.

Avey 3-spindle, high speed, b. b.

AIR COMPRESSORS.

Ingersoll Rand 12x12.	Blaisdell 6x8 horizontal.
Ingersoll Rand 10x12.	

DRILLS.

Electric, $\frac{1}{2}$ and $\frac{3}{4}$ capacity, full ball bearing.

MOTORS.

New Prices.

$\frac{1}{2}$ h. p., single phase, new, G. E. \$26.	1 h. p., 3 phase, new, G. E. \$35.
1 h. p., single phase, new, G. E. 42.	3 h. p., 3 phase, new, G. E. 49.
2 h. p., single phase, new, G. E. 65.	5 h. p., 3 phase, new, G. E. 60.

FOR SALE BY

Bessemer Gas Engine Co., Grove City, Pa.

No. 620—Boring & milling machine, No. 145 Detrick & Harvey floor, size 72"x72"	900.
No. 470—Boring mill, 86" Niles vertical, dia. table 66", 2 swivel heads on rail, friction feed, width of rail 21"	1800.
—Boring mill, 60" Bullard, Serial No. 3711, 2 swivel heads on rail, gear feed, belt driven	1250.
No. 350—Boring mill, 72" Bullard, Serial No. 3442, 1 swivel head on rail, 1 special head for boring crank pin holes in head. This head can also be used for boring and turning. Dia. table 6', gear feed, belt dr.	1500.
No. 276—Drill, 36" Simplex radial	300.
No. 102—Drill, 48" Prentice radial	125.
—Drill press, 22" Hoefler	50.
—Drill press, 16"	40.
No. 661—Drill press, 30" Weigle, with tap. att. and patent belt shifter.	150.
No. 396—Drill press, 24" Aurora	100.
No. 375—Drill press, 12" U. S. sensitive	25.
No. 191—Drill press, 72" Sellers radial, motor drive without motor	350.
No. 112—Drill press, 6" American, motor drive without motor	700.
No. 377—Drill press, Baker high speed, 34" spindle	300.
—Drill presses, 4" Colburn heavy duty, with adjustable table, both crosswise and up and down, (2) each	400.
No. 84—Lathe, 14"x5" American	90.
—Milling machines, 36"x36"x8" Beeman & Smith, 1 side head, 1 head on cross rail	800.
—Planer, 36"x36"x12" Cincinnati, 2 heads on rail, belt drive, very good condition	800.
No. 52—Shaper, 18" Smith & Mills	375.
No. 206—Shaper, 22" Smith & Mills	550.

USED AND REBUILT MACHINERY

FOR SALE BY

Asher Machinery Co., - 217 Centre St., New York, N. Y.

Automatic screw machine, 1" Gridley, 4-spindle, complete	\$ 650.
Grinder, No. 2 Brown & Sharpe universal, 12x30, complete	600.
Miller, No. 3 Cincinnati plain, s. p. d.	1,100.
Press, No. 24 V. & O., o. b. i., 2" stroke, like new	400.
Press; No. 6 Adriance, o. b. i., weight 5500 lbs.	700.
Shaper, 20" Stockbridge heavy duty, 90% new	675.

FOR SALE BY

Tranter Manufacturing Co., - 105 Water St., Pittsburgh, Pa.

Drill, portable electric 1 1/2", 220 v., 3 ph., 60 cy., bargain.
Drill, Silver 19", post and c. s.
Forge and anvil, Champion No. 31.
Grinder, 8" U. S. electric bench, 110 v., new, 20% off list.
Grinder and buffer, Citizbe No. 10-A.
Grinder, Mummert Dixon, oilstone and c. s. very good condition.
Grinder and twist drill attach., Wilmarth & Morman, J. B.

FOR SALE BY

Norton-Broadway Mchy. Co., Sixth & Baymiller Sts., Cincinnati, O.

LATHES.

18"x8' Bradford stand, change, taper.	35"x20' Bradford.
20"x10' Hendey, q. c.	42"x24' Bradford.
20"x12' Bradford q. c.	24"/28"x14' McCabe, 2 spindle.
32"x16' Wickes.	

GRINDERS.

18"x96" Norton cylindrical.	No. 60 Heald cylinder.
10"x72" Brown & S. cylindrical.	Bath & Walker surface.
Nos. 11 Brown & Sharpe cylindrical.	No. 4 & No. 120 Gardner disc.
No. 14 Pratt & W. vertical surface.	6"x20" Webster & Perks.

MILLING MACHINES.

No. 3 LeBlond plain.	No. 4 Brown & Sharpe universal.
No. 4 Becker plain horizontal.	No. 4 Cincinnati universal.
No. 13 Brown & Sharpe plain.	No. 4B B. & S. heavy single pulley.

PRESSES.

No. 3 Toledo inclinable.	No. 723 Toledo inclinable.
No. 3-A Willard inclinable.	No. 1 Long & A. punch and shear.
No. 4 Toledo inclinable.	No. 3 Hilles & Jones double end punch and shear.
No. 19-C Bliss inclinable.	No. 57 Toledo geared.
No. 183 Stiles Parker inclinable.	

BORING MILLS.

34" Bullard, one turret head.	42" Gisholt, 2 heads.
36" Niles, 2 heads.	50" Niles, 2 heads.
42" Bullard, 2 heads.	6" Gray horizontal.

PLANERS.

24"x 8' Pond, 2 heads.	36"x10' Fitchburg, 2 heads.
30"x16' Gray, 2 heads.	Whitcomb crank planer, 12" stroke, 172 between housings.
30"x 8' Gray, 2 heads.	

SHAPERS.

16" Steptoe, crank.	20" Smith & Mills, single pulley.
16" Stockbridge, back geared.	24" Queen City, single pulley.
20" Ohio crank.	20" and 24" Hendey.

MISCELLANEOUS.

Bulldozers, No. 3 Ajax with motors.	Gear cutter, No. 3-26" Cinti. auto.
Drill, H. & W. 5-spd., high speed.	Gear cutter, No. 5-48" B. & S.
Drills, 3-4-5 and 6-spindle Francis Reed high speed.	Gear hobber, 12" G. & E., univ. hd.
Drill, Kokomo 4 spd., high speed	Hammer, 30 lb. Bradley upr. helve.
Drill, 3' Morris radial, gear box.	Press, 400 ton Caldwell wheel.
Drill, 5' American radial, gear box.	Shear, 10' Bertsch square, 14 gauge.
	Welder, Winfield butt, 60 k. w. \$750.

And about 300 other good machine tools in stock.

USED AND REBUILT MACHINERY

FOR SALE BY

J. L. Lucas & Son, Inc., - - - **3 Fox St., Bridgeport, Conn.**

TOTE BOXES

1,000 brand new nesting type tote Boxes, 20x12x6 $\frac{1}{2}$, 16 gauge steel with lapped corners and draghole handles, at \$1.00 each.

FOR SALE BY

United Mchry. & Supply Co.,

1241 Walton St., St. Louis, Mo.

Band resaw, 20" h. p., a. c. mtr., new.
Blowers, Nos. 1, 5, 6 & 8 Root.
Bolt cutter, 3" National.
Drill, 3" Mueller radial, gear box.
Hammer, air, 150 lb., belt drive.

Hoist, 7 $\frac{1}{2}$ ton, 19' span, a. c.
Press. Stiles, 6" draw, 7000 lb., b. g.
Punch, No. 2 $\frac{1}{2}$ Bliss, double arm.
Shear, Unishear No. 0-36, 14 gauge.
Shear, 72"x $\frac{1}{2}$ " Bliss.

FOR SALE BY

Hotchkiss, Blue & Co.,

249 Railway Exchange, Chicago, Ill.

Punch & shear, Hilles & Jones No. 3, s. e. type, 36" throat, arch. jaws, punch 1 $\frac{1}{2}$ x1, shear 1" plate, bar shear 2 $\frac{1}{2}$ " round, 7x1 $\frac{1}{2}$ flat and 5x5x $\frac{1}{2}$ angles, G. E. 10 h. p., 220 v., 3 ph., 60 cy. motor. Fully equipped shears, strippers, blocks, etc., very good condition.

Hammer, Bradley 60 lb. cushion helve, new rubber bumpers & extra set.

FOR SALE BY

General Machinery Corporation,

170 Summer St., Boston, Mass.

Drill, 20" Canedy-Otto, b. g., p. f.
Drill, Henry & Wright 2-spindle.
Lathe, 12"x6" Hendey, with taper.
Millers, No. 12 B. & S. mfg.
Millers, No. 13 B. & S. mfg.

Miller, No. 20 Oesterlein univ.
Oven furnace, No. 4 American.
Oven furnace, No. 16 American.
Shaper, 20" Smith & Mills, b. g.
Tapping mche., No. 1 Garvin auto.

FOR SALE BY

Carlson Machinery Co., Inc.,

Davenport, Iowa

Boring mill, No. 2 Rockford horiz.
Boring mill, No. 3-A Universal hor.
Centering machine, 4" Pratt & W.
Drill, 1" Sipp h. s. b. b., 8" overhang.
Grinder, 10x20 Landis universal.
Grinder, No. 2 Oakley univ., t. & c.
Hobber, 24" Schuchardt & Schutte.

Lathe, 7"x30" Dalton bench.
Lathe, 13"x5" Sheppard.
Miller, No. 3 Ohio plain.
Turret lathe, No. 4 W. & S. pl.
Turret lathe, No. 6 Warner & S.,
power feed to carriage and turret.
Turret lathe, No. 3 Foster.

FOR SALE BY

Nelson Machinery Co.,

123 N. Pearl St., Green Bay, Wis.

Drill press, 4-spindle Henry & Wright, ball bearing.
Furnace, electric, Booth-Hall 1 $\frac{1}{2}$ ton, 600 k. v. a., new.
Miller, No. 3 Cinti univ., cone dr.
Pipe machine, No. 14 Jarecki 2 $\frac{1}{2}$ to 8", q. c., adj. dies.

Pipe straightener, No. 2 Kane & Roach, new.
Riveters, new "Wonder" portable gap, (2), each.....\$200.
Shaper, No. 16B G. & E. crank, cone drive.
Turret, 1 $\frac{1}{2}$ "x18" Pratt & Whitney.

FOR SALE BY

McMullen Machinery Company,

Grand Rapids, Mich.

Automatics, 4" Cleveland, (2).
Baling press, Chicago scrap metal.
Cold Saw, No. 4 Greenfield.
Drill, 20" Wisconsin all geared.
Furnace, No. 200 Stewart, Crucible.
Grinder, No. 6-A Bryant.

Grinder, Wisconsin universal.
Lathe, 2 $\frac{1}{2}$ x26 Greenlee flat turret.
Pipe machine, 6" Merrill.
Press, No. 3 Manville d. a.
Press, No. 54 Consolidated.
Welders, No. 10 Thomson, batt.

USED AND REBUILT MACHINERY

FOR SALE BY

Clinton Machinery Co., 126-8 S. Clinton St., Chicago, Ill.

MILLING MACHINES.

No. 2 Brown & S. univ., comp. (2). No. 1 Kempamith univ., complete.
No. 1½ Brown & S. univ., complete. No. 00 Brown & Sharpe hand.

SHAPERS.

20" Gould & E. high duty (2). 18" Lodge & Davis crank.
24" Milwaukee b. g. crank. 15" Pratt & Whitney crank.
20" Cincinnati b. g. crank. 14" Garvin crank.

MISCELLANEOUS.

H. & W. 6-spindle b. b. drill press. Newbold rotary shear with 40" thrt.
18" Bealy disc grinder. 8" capacity.
No. P4 Ferracute punch press. No. 2X Garvin automatic tapper.
No. 3 Consolidated punch press. No. 24-53" Gardner horizontal disc
300 amp. Wilson portable arc welder. grinder.

Large stock of lathes, punch presses, plain and universal grinders, screw machines and ball bearing presses.

FOR SALE BY

Brownell Machinery Co., 150 Pine St., Providence, R. I.

BORING MILLS.

51" Bullard vertical boring and turning mills (3).

DRILLS.

5' Prentice Bros. radial. 24" Hoefer sliding head.
3' Gang radial. 28" Snyder sliding head.
2-spindle Avey h. s., b. b. No. 1 Langelier h. s., b. b. bench.

GEAR CUTTERS.

No. 4, 48"x10" Brown & Sharpe. No. 2 Bilton automatic gear millers.
No. 3, 38"x 8" Brown & Sharpe.

GRINDERS.

No. 12 B. & S. cyl. 8x36 s. p. d. Nos. 2 & 3 B. & S. cutter & reamer.
No. 11 B. & S. plain cyl. 4x30. 14" Blount wet tool.
No. 2 B. & S., surface. 20" Diamond standard emery.
No. 1. B & S., surface. American twist drill.

LATHES.

30"x20" Fitchburg. 24"x16" South Bend.
22"x26" Lodge & Shipley. 16"x 6" Pratt & Whitney.
24"x16" LeBlond. 12"x 5" Reed, with taper.

MILLING MACHINES.

No. 4-A Brown & Sharpe universal. No. 4 Thurston die.
No. 4-B B. & S. heavy plain. Ingersoll adjustable rail inclined
No. 3-G. H. LeBlond heavy plain 26"x26"x12", m. d.
with dividing heads. Newton slab 28"x28"x13'.
No. 2 B. & S. plain. U. S. hand.
No. 2 B. & S. vertical. No. 3 B. & S. vertical attachment.
No. 3-H Becker vertical profiler.

METAL CUTTING MACHINES.

12" H. & R. metal cutting band saw. 3" H. & R. a. s. cutting-off mche.

PLANERS AND SHAPERS

54"x42"x14' Gray, spur gear, 3 hds. 24" Potter & Johnston shaper.
48"x48"x16' Niles-Bement-P., 2 hds. 15" Potter & Johnston shaper.
36"x36"x10' Woodward heavy, 3 hds. 24" Hendey friction shaper.
17"x20"x 4' Whitcomb.

POWER PRESSES.

No. 5 Manville s. a., p. p., roll feed. No. 1 Standard power screw.
No. 68 Bliss d. a., inclinable cam. 100 lbs. plain drop.
No. 1 Bliss d. a. cam. Bosworth foot presses, (new).

SCREW MACHINES.

No. 3 Warner & Swasey, g. f. h. No. 0 Brown & Sharpe, plain head,
3"x36" Jones & Lamson, flat turret. wire feed.

MISCELLANEOUS.

Band saw, 36" H.B. Smith, wood wk. Slotter, 12" Bement-Miles.
Hammer, 200 lbs. Beaudry champion. Wood worker, No. 55 Crescent univ.
Rolling mill, 12"x20".

USED AND REBUILT MACHINERY

FOR SALE BY

Vernier Manufacturing Co..

Cedar Rapids, Iowa

Can Making Machinery with Conveyors.

- 1—No. 166 Slitter.
- 1—No. 249 Automatic round end can flanger.
- 2—No. 190 Automatic double end double seamers.
- 1—No. 66 Automatic can testing machine.
- 1—No. 83 Lock seam body maker with soldering attachment.

Machines are in good condition.

FOR SALE BY

E. L. Klauber Machinery Co.,

320 South Third St., St. Louis, Mo.

Bench drills, motor drive, 110 volt.
 Drill, 28" Prentice, b. g., p. f., sl. hd.
 Drills, 3-spindle Dwight slate.
 Drill press, 34" Barnes, b. g., s. h. t. a.
 Drill press, 26" Superior b. g., sl. hd.
 Drill press, 34" Barnes, b. g.
 Drill press, 14" Myers, sensitive.
 Gear cutter, 30" Whiton.
 Gear hobber, No. 0 Schuchardt & S.
 Gear miller, automatic, 4" cap.
 Grinder, No. 3 Brower & S. cutter.
 Grinder, No. 2 Garvin hole.
 Grinders, electric bench, 1/2 h. p. 110
 volt a. c.
 Lathe, bench, Stark, with collets.
 Lathe, 18x10 Lodge & Shipley q. c. g.
 Lathes, 14x6 Davis tool room.

Lathe, 16x9 Lehmann d. b. d., q. c.
 g., taper attachment.
 Lathe, 13x6 South Bend.
 Lathe, 15x6 South Bend.
 Lathe, 16x6 Prentice p. c. g., s. b. g.
 Miller, No. 1 1/2 Knight.
 Millers, hand, No. 0 Burke.
 Pinion and wheel cutter, Stark.
 Planer, 30"x30"x3' American.
 Presses, 30 ton Southwark, hydr.
 Screw mches, 1/2" Cleveland auto. (2).
 Shaper, 14" Steptoe.
 Shaper, 24" Cincinnati b. g.
 Tapping machine, No. 6 St. Louis.
 Tapping mach. 1/2" Montgomery h. s.
 Tapping machine, No. 2 St. Louis.
 Tapping mche., No. 1 Garvin auto.

**Tight Joints
 that
 Swivel**



*Sample
 on
 Approval*

Quick-As-Wink
Industrial Hose Couplings

These bronze couplings swivel freely but NEVER LEAK and can't be put out of commission. Just push together Quick-As-Wink, that's all! Can not become disconnected accidentally. Guaranteed for one year. Made in sizes from 1/8" to 4". Get descriptive bulletin and prices.

C. B. HUNT & SON . . . SALEM, OHIO

REAL BARGAINS

LATHES

16"x 8' LeBlond, q. c.
14"x 6' Monarch, q. c.
18"x 8' Bradford, q. c.
18"x 10' Boye & Emmes, q. c.
18"x 8' Mueller, quick change.

20"x 8' American, q. c.
24"x 16' Bradford, l. c.
27"x 18' Lodge & Shipley, m. d.
36"x 14' Putnam (triple geared).

10'—Streine Square Shear 15" Gap, 3/16" Cap., Motor Drive.

10'—Streine Power Press Brake cam operated 3/16" Capacity.

RADIALS AND DRILL PRESSES

3' American, cone drive.
4' Bickford s. p. drive.
6' Dreses, motor drive.

24" American s. h. and b. g.
24" Aurora, sliding head, b. g. p. f.
8-spindle Bausch multiple.

PUNCH PRESSES

No. C-2 Ferracute o. b. inc.
No. 18 Bliss, o. b. inclinable, (4).
No. 3-A Willard, o. b. inc.
Bertsch quick acting 18" throat.
No. 3 Bliss, stiff back.

No. 2 L. & A. 10" throat.
No. 6 Whiting, single end, 12" thrt.
No. 103 Bliss.
Robinson straight side.

PLANERS AND SHAPERS

24"x 6' Powell, 1 head.
30"x 8' Cincinnati, 1 head.
30"x 8' Gleason 1 head.
48"x 36"x 12' Cincinnati, 2 heads.
24" Kelly shaper, b. g.

25" Smith & Mills b. g.
16" Smith & Mills, cone drive.
16" Gould & Eberhardt shaper.
16" Steptoe b. g.
15" Smith & Mills, cone drive.

**No. 5 LeBlond Heavy Duty Miller
Single Pulley or D. C. Motor Drive**

GRINDERS

No. 2 Oesterlein tool and cutter gear.
No. 1 1/2 LeBlond tool and cutter
grinder, (3).
No. 2 B. & S. surface.
No. 2 Walker surface.

No. 60 Heald, long table.
No. 60 Heald, short table.
No. 3 B. & S. universal.
16x66 Queen City plain.
No. 1 1/2 Landis universal.

MILLING MACHINES

No. 0 Cincinnati plain.
No. 1 1/2 Valley City plain.
No. 3 B. & S. plain, cone drive.

No. 3-B B. & S. motor drive.
No. 4 Becker Brainard plain.
No. 4 Cincinnati plain.

MISCELLANEOUS

Bolt cutters, 2", 1 1/2" and 1" Acme.
Bolt cutter, 1" Landis.
Boring mill, 42" Bullard vertical.
Boring mill, 10" Niles, 2 heads.
Chain hoists, various sizes.
Gas furnaces.
15" Gleason gear generator.
Hack saws, Racine 8x3, 12x15 s. p. d.

Hammer, steam, 800 lb. Niles.
Keyseater, No. 1 Colburn.
Millers, hand, (6).
Shear, 10" Bertsch 14 gauge.
Shear, 10" Cincinnati 10 gauge.
Tooth rounder, 12" Ingle.
Turret lathe, No. 2 W. & S. (3).
Turret, 24" Gisholt 6 1/4" h. spindle.

Send for Stock List Just Issued

We Buy Modern Machine Tools—What Have You?

The Jones Machine Tool Co.
Front & Pike Sts., Cincinnati, Ohio

NEW 3 PHASE MOTORS CHEAP. 3 H. P. \$54.50; 5 H. P. \$65.50

LATHES

12"x 5' Cleveland, geared head.
14"x 6' Carroll-Jamieson, new, q. c.
14"x 6' Hamilton, grd. hd., motor dr.
14"x 6' Monarch, quick change.
14"x 6' Sebastian, grd. hd., m. d.
14"x 8' Sidney, double back geared.
16"x 8' Hamilton, quick change.
18"x 10' American, quick change.

19"x 10' LeBlond extra heavy duty.
20"x 8' American, geared head.
20"x 10' Hamilton, rapid production.
20"x 10' Prentice, taper attachment.
20"x 10' Boye & Emmes.
24"x 24' Prentice, with raising block.
8x60" & 3 1/2 x 60" Fitchburg, Lo-Swing

TURRET LATHES and SCREW MACHINES

Acme 1/2" cap., wire feed column.
No. 4 Defiance, 1 1/2" capacity.
1 1/2" capacity Smurr & Kamen.
1 1/2" Milholland.

2x24 and 3x36 J. & L.
No. 1 Foster, 15/16" capacity, (2).
Warner & Swasey No. 2.
No. 0G Brown & Sharpe automatic.

SHAPERS

14" Niles, traveling head.
14" Steptoe, crank.
16" American tool room.

16" O. & S., b. grd., new, low price.
24" O. & S. back geared crank.
16" Steptoe, b. g.

PRESSES

No. 10 and No. 15 Excelsior, foot.
Nos. 3-A & 5-A Willard inclinable.

Nos. 1, 1 1/2, 2, 2 1/2 Robinson, new.
No. 2 1/2 o. b. i. Consolidated.

DRILLS and RADIALS

No. 1 Baush multiple.
Electric Drills, Black & Decker.
No. 4 Duntley electric.
22", 24", 26", 28" and 32", sliding hd.
32" Hoefer, sliding head.

6' Ceiling drill.
25" Kokomo high speed.
4-spindle Reed sensitive.
44" Stover.
Hoie Hog, No. 66-D, 7-spindle.

MILLING MACHINES

No. 1 Kempsmith universal, new.
One No. 1-Y Brown & Sharpe, plain.
No. 2 Kempsmith plain.
No. 3 Kempsmith plain, new.
No. 25 Bilton.

No. 25 Becker plain, power feed.
No. 2 H Brown & Sharpe plain.
Oesterlein 24x7 1/2 x 18 plain.
Briggs "A" high duty, 24x8" table.
No. 7 Becker, Lincoln type.

GRINDERS

Nos. 1 & 78 W. & M. surface.
6"x 15" Fitchburg plain.
12"x 36" Cincinnati universal.
16"x 42" Landis universal.
36" and 66" Yates plate.

No. 60 Heald cylinder.
Schmitt cylinder grinder.
J B X, W. & M. tool and cutter.
No. 10 Besly 18" double disc.
No. 20 Bryant, chucking.

MISCELLANEOUS

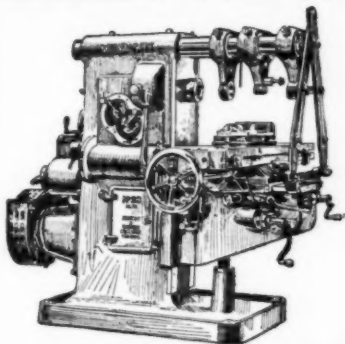
Band saw, Clark, compound.
Band saw, Napier 10"x 10".
Blower, No. 6 Piqua, pressure.
Blower, positive pressure, Leiman
Boring mill, Colburn No. 3, tur. hd.
Boring mill, Sellers 50" car wheel.
Boring mill, 72" column.
Brake 6", double truss.
Brake 10", Chicago Steel, 16 ga.
Brake 10", Keene, 18 ga.
Broaching mchs., 1 and 3 LaPointe.
Compressors, 6x8, 8x8 and 9x8.
Gear cutter, No. 3-26 B. & S.
Gear miller, Bilton No. 1.
Hammer, 150 lb. Standard drop.

Hammer, 200 lb. Bradley.
Pipe machines, 2", 4" & 6".
Planer, 36"x 36" Gray, heavy duty.
Planer, 36"x 36" x 14" Gray, 2 heads.
Planer, 42"x 42" x 12" Gray, 2 heads.
Pumps, Gould triplex, 6 1/2 x 8".
Punch & shear, 3 x 10" throat.
Riveting hammers, Nos. 1, 2, 3, 4-A
High Speed.
Scale, 1500 lb. Toledo, dial type.
Shear, 60" Peck, Stow & W., 15 ga.
Shear, No. 362 Robinson.
Shear, No. 20 Quickwork, 30" throat.
Shear, circular, Pettingell, 60" thrt.
Threading mche., W. & P. 2-spindle.

OSBORNE & SEXTON
MACHINERY COMPANY
COLUMBUS OHIO

Dept. H.

LIKE NEW—



**Cost
Much
Less**



Factory Rebuilt Milwaukee Milling Machines

that will satisfy both your Production and Purchasing Departments. Genuine MILWAUKEE MILLERS—rebuilt at the factory. Every machine is completely disassembled, re-scraped, and new parts used wherever needed. They carry the same accuracy guarantee as our *new machines*. Better write today—

THESE ARE STILL AVAILABLE

No. 1A Manufacturing	No. 2A Manufacturing
No. 2AS Mfg. M. I. B.	No. 3B Plain
(Motor-in-Base)	No. 3B Vertical

SUBJECT TO PRIOR SALE

Address: Rebuilding Department

MILWAUKEE MILLING MACHINES
KEARNEY & TRECKER
CORPORATION

5926 National Ave.,

Milwaukee, Wisconsin

(See Page 3 for K & T New Milling Equipment)

A Few Listings From a Stock of 1500 "Restored" Machines

Brown-Sharp Nos. 0, 00, 1 and 2.
Gridley 4 spindle $\frac{3}{4}$ ", $1\frac{1}{4}$ " $1\frac{3}{4}$ ", $2\frac{3}{4}$ ".
24" and 36" Bullard Boring Mills.
42" Bullard Boring Mill.
6" Bar Barrett Horizontal.
7" Bar Newton Horizontal.
10—16" Niles Vertical.
10" Niles Vertical.
14—20" Bests Vertical.
60" Cincinnati Boring Mill.
72" Niles-B-Pond Vertical R.T.
72" Gisholt Vertical RT.
84" Bullard Vertical RT.
No. 21 Lucas Horizontal.
Pratt & Whitney Vertical No. 14
Brown & Sharpe Univ. Nos. 1 & 2.
No. 2 Diamond Surface Grinder.
Brown & Sharpe Surface No. 2.
No. 19—53" Besly Disc.
No. 21 Besly Disc Grinder.
Landis Grinder 10x52".
Norton 6"x32", to 18"x96".
Diamond Face 30"x84".
No. 190 Wells Cutter-Reamer.
Pratt-Whitney Auto Miller, 5", 12".
Brown-Sharp Univ. Nos. 1 $\frac{1}{2}$, 3.
Garvin Universal No. 2-A.
Milwaukee Universal No. 3-B.
Cincinnati Vertical Nos. 2, 3, 4.
Cincinnati Plain Nos. 2, 3, 4, 5.
Cincinnati Pl. Intermittent Feed No. 5.
Hendey Plain No. 4-B, No. 3-B.
Cincinnati Universal No. 2, No. 3.
Ingersoll Slab Mill 40x22x6".
Ingersoll Slab 50x20x12.
Newton Horizontal 56x36x12.
Dress Plain Radial 4", 5".
American Full Universal 6".
American Triple Geared 4".
American Plain 6".
6" Mueller Plain Radial.
Nateo Multiple Nos. 14, 32 and 30.
Baush Multiple Nos. 2, 3, 4.
No. 3-D Colburn Drill.
Cincinnati-Bickford 5", 6".
Rockford Gang Drill 2, 3, 4.
Barnes Gang Drill 4-spindle.
Warner-Swasey Turret, Nos. 3A, 2A.
Warner-Swasey Screw Mche. No. 4.
Libby Turret 18", 26".

Garvin Tappers No. 2, No. 2-X.
Baker Tapper 7".
RH—3 Revolver.
72"x58" Niles-Bement-Pond M. D.
50"x30" New Haven, M. D.
48"x20" N-B-P Motor Drive.
42"x39" Putnam Motor Drive.
42"x50" American Motor Drive.
42"x50" Putnam Motor Drive.
42"x18" American Motor Drive.
36"x20" American Motor Drive.
30"x12" Lodge & Shipley Grd. Hd.
30"x12" American Geared Head.
30"x12" H-S-G Geared Head.
26"x22" Boye & Emmes M. D.
Newton Rotary Planer, 64".
Pond Planer, 84"x64"x15".
D. & H. Openside 72"x72"x18".
Cincinnati 48"x36"x20".
Cincinnati 48"x48"x10".
Cincinnati 36"x36"x8".
D. & H. Openside 36"x36"x12".
Gray Planer, 26"x26"x8".
15-Ton Lucas Forcing Press.
No. 1 Bias Toggle Press.
Greenard Arbor Press Nos. 4, 7, 8.
Ajax Upsetter $\frac{3}{4}$ ", $1\frac{1}{2}$ ", 2".
Acme Upsetter $1\frac{1}{2}$ ", $2\frac{1}{2}$ ".
Ingersoll Compressor 12"x12".
Penn Compressor 10x9".
Hilles-Jones Bending Roll No. 3-H.
Bertsch Angle Bender 3".
Rotary Table Cincinnati 20".
Fays Automatics.
Gorton Cutting-Off No. 2-B.
Newton Slotter 15".
G. & E. Shaper, 16", 20", 24", 32".
American Shaper, 16", 20", 24".
Stockbridge 16" single geared New.
Stockbridge 16" back geared New.
Stockbridge 20" back geared New.
Stockbridge 24" back geared New.
Cincinnati Gear Cutter 36".
B. & S. Gear Cutter, 72", 60", 36".
Pratt-Whitney Gear Cutter, 90".
Gleason Gear Planer, 24", 36", 48".
Gleason Gear Generator 6", 11", 18".
Gould & E. Gear Cutter 48", 72".
Barber-Colman Gear Hobber No. 12.
No. 5—Lees-Bradner Gear Hobber.

Write for "Simmons Pictorial News"

Simmons Machine Tool Corp.

NEW YORK
149 Broadway

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1700 Troy Road

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88 Exchange St.

Specials

No. 3½ Bliss toggle drawing press, belt drive, Excellent condition.

No. 164 Toledo toggle drawing press, belt drive, high ratio gearing.

40" Pick eye forging press, 5½" stroke, 8" diameter shaft.

No. 165 Consolidated double crank press, 37" between housings, 2½" stroke. Flywheel type.

10" Robinson toggle press brake, two rows of toggles and two parallel slides.

No. 15 Williams & White single end punch, arch. jaw, 18" throat, 220 A. C. motor.

No. 13 Williams & White single punch, plain jaw bar and angle shear, 220 volt A. C. motor.

No. 4 Williams & White bulldozer, belt drive.

Other Machines

No. 3B Kearney & Trecker plain miller, double overarm.

No. 3 Cincinnati Hi-Power vertical miller.

No. 3 Kempsmith & LeBlond plain millers.

No. 2 Cincinnati universal miller, index centers, vise, etc.

No. 00 Brown & Sharpe auto. screw machine, ser. 5803.

No. 0G Brown & Sharpe auto. screw mchs., ser. 4308, 4310.

No. 3H. 5 and 6 Becker vertical millers.

20" Rockford back geared shaper.

15" Dill slotter, nearly new.

Twenty National Acme multiple spindle auto. screw machines Nos. 53, 55 and 56. All running now. Serials from 3740 to 12100, very reasonable for quick sale.

A. D. White Machinery Co.

108-114 N. Jefferson St.,

Chicago, Ill.

REAL VALUES

RADIALS AND UPRIGHT DRILLS

6' American Tr. Grd. Pl. Radial, g. b. d.
6' & 4' Cincinnati-Bickford Plain Radials
gear box drive, late type.
5' & 4' Drees Hi-Duty. Pl., g. b. d.
5' American Tool Wks. t. g. Pl., g. b. d.
4' Fosdick Plain Radial, g. b. d., late.
3' & 2½' Carlton b. b. Sens., tapping.
3½' & 3' Mueller Plain Radial, g. b. d.
4' & 3' American b. b. Sens., t. att.
2½' Plain Gang Radial, g. b. d.
Nos. 1 & 3 W. F. & J. Barnes Hor. Rad.
No. 1 S. S. Natco, Garvin Hor. Duplex.
28' & 26' W. F. & J. Barnes Up., latest.
26' W. F. & J. Barnes Up. t. a.
26' Barnes ALL GEARED Upright.
25' Snyder Upright Drill.
25' & 22' Kokomo High Speed Up.
24' Aurora Upright, 22' same, tap att.
24' Sibley Upright Drill.

22' W. F. & J. Barnes Upright, t. a.
20' W. F. & John Barnes 4-spl. Gang.
3-spindle W. F. & J. Barnes Gang 26'.
6-spindle 20' Hoefer Gang.
Detroit 5-spindle Horizontal Dr. Press.
Leland Gifford 1 spl. spdl., b. b., No. 1 M. T.
Demco single spindle, b. b. No. 2 M. T.
Avey 2-sp. b. b., No. 2 Morse taper.
No. 14 Colburn Heavy Duty.
No. 25-24' Foote-Burt Heavy Duty.
No. 310 Baker Bros. heavy duty.
Henry & Wright 6 & 2-Spindle B. B.
Drills, No. 2 Morse Taper.
No. 12 Pratt & W. Multiple, 8 spindle.
No. 0 Fox Multiple, 6-spindles.
No. 1 Fox Mult., equipped with 10 spdl.
No. 3 Fox Mult., equipped 12 spindles.
No. 11 P. & W. Mult., equip. 6-spdl.
No. 37 Natco Mult., equip. 20 spindle.

ENGINE AND TURRET LATHES

42'x30' Amer. g. h. Lathe, q. c., late.
36'x30' Amer. tr. grd., q. c., late type.
36'x22' Springfield tr. grd., stan. ch.
36'x16' L. & S. sel. g. h., q. c.
30'x16' N-B-P stand. change, late types.
30'x12' Lodge & Shipley, q. c., late.
26'x18' Schumacher & B. q. c. Lathe.
27'x12' LeBlond q. c., late type.
24'x12' LeBlond q. c. Lathe.
30'x14' Lodge & Shipley, q. c.
24'x14' L. & S. q. c., tap. att.
24'x12' L. & S. s. g. h., q. c., t. a., late.
30'x10' L. & S. q. c., taper att.
24'x10' G. & K. q. c.
24'x10' Boye & Emmes q. c. Lathe.
16'x10' G. & K. q. c., taper att.
22'x12' Whitcomb-Blaisdell setni-q. chg.
21'x10' LeBlond q. c. Lathe.
20'x10' American q. c.
20'x10' Chard q. c. taper attach.
20'x10' American grd. hd., q. c.
19'x10' LeBlond q. c. Lathe.
18'x8' Monarch quick change.
18'x8' American q. c., t. a., late type.
18'x8' LeBlond q. c. Lathe.
18'x8' Mueller, q. c. Lathe.
18'x8' L. & S. sel. grd. hd., q. c.
16'x10' Hendey, yoke hd., q. c., t. a.
16'x8' and 16'x6' Hendey yoke head
q. c. Lathe, taper att., late type.
17'x5' LeBlond RAPID PRODUCT.

16'x8' & 16'x6' Monarch g. h., q. c., m. d.
14'x8' & 14'x6' American High-Duty
geared head, quick chang. m. d.
16'x 6' Monarch quick change Lathe.
14'x 6' L. & S. sel. grd. hd., q. c., late type.
14'x6' Reed-Prentice, grd. hd., q. c.
14'x6' Hendey tie bar., q. c. t. a.
No. 9 LeBlond Multi-Cut Lathe.
8'x108' Lo-Swing with 2 carriages.
No. 1-B Foster Univ. Hol. Hex. Turret.
24' & 21' Gisholt turret, t. a., late.
18' Libby type A turret, 3½" sp. hole.
3'x36' J. & L. dbl. spdl. Turret.
3¼'x40' Greenlee Tur., bar equip.
3'x36' J. & L. Turret, chuck equip.
2¼'x24' Jones & Lam., Tur bar equip.
2½'x26' Pratt & Whitney, grd. hd. Tur.
chucking equipment.
Nos. 2, 4, 6 Warner & S. Turret.
Nos. 2, 4, 6 Foster Turret.
No. 2A W. & S. Univ. Turret, chkg.
13' Gisholt Turret, taper att.
No. 4 Southworth Turret.
No. 2 Bardons & Oliver Turret.
24'x10' LeBlond Univ. Turret.
21'x10' LeBlond, 3-way Turret and
roller back rest on carriage.
No. 4 B. & S. Wire feed Screw Mche.
No. 4 Bardons & O. Turret lathes.
No. 4 Millholland Turret, g. h., m. d.
1' Biggs Hand Screw Machine.

EASTERN MACHINERY CO

We also Buy machinery

Rebuilt and Guaranteed Machine Tools

GEAR MACHINERY AND GRINDERS

No. 5-A Lees-B. Gear Hobber.
 No. 12 Barber-Colman Gear Hobber.
 Nos. 2 & 3 Barber-C. Gr. Hob., late.
 18-H Gould & E., Hi-Duty Gr. Hob.
 16⁸ Cincinnati Gear Hobber.
 Nos. 6, 61, 615 Fellows Gear Shapers.
 20⁸ Ingle Gear Tooth Rounding Mach.
 6⁸, 11⁸ & 18⁸ Gleason Bevel Gr. Gener's.
 No. 6-72⁸ B. & S. Auto. Sp. Gr. Cut.
 No. 5-48⁸ B. & S. Auto Spur Gr. Cut.
 No. 4-48⁸ B. & S. Auto. Spur Gear Cut.
 No. 3-26⁸ B. & S. Auto. Spur Gear Cut.
 No. 3-36⁸ Cin. Auto Spur Gear Cut.
 No. 22-12⁸ Heald Rotary Surface.
 24⁸ Cincinnati Auto. Spur Gear Cutter.
 84⁸ Diamond Face Grinder, arr. for m.d.
 No. 3 W. & M. Auto. Surf. mag. chk.
 No. 3 B. & S. Surf., planer type.
 14⁸ P. & W. Vert. Surf. Grind., m. c.
 8⁸ Heald Grinder & Surf., style 200.
 Nos. 70 & 75 Heald Internal Grinders.
 No. 70 Heald Int., clutch in head.
 No. 60 Heald Cyl., late type, complete.
 Capital Internal, collet attachment.
 No. 120 Gardner Double Disc.

No. 4-23⁸ Gardner b. b. Disc.
 Nos. 14 & 10-30⁸ & 18⁸ Besly Disc.
 No. 6-26⁸ Gardner Disc.
 No. 18-30⁸ Gardner Pat. Mkrs. Disc.
 Walker single stroke Surface Grinder.
 10¹ diam., magnetic chuck.
 No. 8-40⁸ Gardner Disc with Press.
 No. 120 Gardner Combination Disc.
 Nos. 3 & 4 B. & S. Univ., late.
 Yankee Twist Drill Grinder-NEW.
 Oliver Drill Point Grinder.
 10⁸x24⁸ Norton Plain, late type.
 6⁸x18⁸ Landis Plain, self-contained.
 14⁸x50⁸ Norton Plain Grinder.
 No. 1-4⁸x20⁸ Morse Plain Grinder.
 6⁸x32⁸ & 10⁸x36⁸ Norton Plain, late.
 10⁸x36⁸ & 10⁸x52⁸ Landis Plain self-
 cont. grinders, late.
 8⁸x30⁸ Modern Plain, self-contained.
 No. 2-12⁸x36⁸ Cincinnati Plain.
 10⁸x24⁸ & 12⁸x36⁸ Landis Pl., self-con.
 16⁸x48⁸ Landis self-cont. crank shaft.
 No. 2 Oakley Univ. Tool & Cutter.
 No. 1¹/₂ Cinti Univ. Tool & Cutter.
 No. 1 LeBlond Univ. Tool & Cutter.

SHAPERS AND PLANERS

28⁸ Amer. Hi-Duty b. g. Crank, m. d.
 24⁸ Cincinnati hvy. duty, b. g. Crank.
 24⁸ Gould & Eberhardt b. g. Crank.
 24⁸ Steptoe triple grd. Shaper.
 20⁸ Cincinnati heavy duty b. g. Crank.
 16⁸ Hamilton heavy duty, b. g., Crank.

16⁸ Kelly hvy. duty b. g. Crank.
 16⁸ Steptoe heavy duty b. g. Crank.
 15⁸ Hendey fric. grd. Shaper.
 14⁸ Davis plain Crank Shaper.
 38⁸x38⁸x18¹ Niles Planer, 2 hds.
 24⁸x24⁸x6¹ G. A. Gray, 1 head.

MILLING MACHINES

No. 4 B. & S. Univ., c. p., complete.
 No. 3 Hendey Univ., c. p., complete.
 Nos. 3 B. & S. Univ., c. p., comp.
 No. 3H LeBlond Univ., c. p., comp.
 No. 3 Kemp. Univ., c. p., comp.
 No. 2 Cinti Univ., c. p., comp., late.
 Nos. 2 & 1¹/₂ B. & S. Univ., c. p., comp.
 No. 2 Brown & Sharpe Vertical.
 No. 1¹/₂ Valley City Univ., c. p., complete.
 No. 1¹/₂ Owens Univ., cone pul. compl.
 No. 1 Hendey Univ., cone pul. compl.
 No. 5 LeBlond Plain, m. d., all geared.
 No. 3 Cincinnati Hi-Power Plain, c. p.
 No. 3 Hvy. Ohio Plain, c. p., p. r. t.
 No. 5 Hvy. LeBlond Plain, cone pulley.
 No. 3 Kempamith Plain, cone pulley.

Nos. 2 & 3 Cincinnati Plain, cone pulley.
 No. 2 B. & S. hvy. Plain, cone pulley.
 No. 1 Kempamith Plain, cone pulley.
 No. 1 B. & S. Plain, cone pulley.
 No. 0¹/₂ Cincinnati Plain, cone pulley.
 No. 21 Brown & S. Auto., latest type.
 18⁸ Cincinnati Automatic Miller.
 28⁸ Cincinnati Semi-Auto. Duplex.
 28⁸ Cincinnati semi auto.
 18⁸ Cincinnati Plain Mfg. Millers.
 Gooley & Edlund, Briggs type Mfg.
 No. 7H Becker Lincoln type MFG.
 No. 6 Whitney Hand Miller.
 No. 2 Bristol b. b. Hand Miller.
 No. 2 Knight Milling and Drilling Mche.
 No. 3¹/₂ Fox Hand & Power Millers.

(Continued on next Page)

108 E. Pearl St., CINCINNATI, O.
 What have you to Sell?

Rebuilt and Guaranteed Machine Tools

(Continued from Preceding Pages)

MISCELLANEOUS

Air compressor, 18x12x12 Worthington, dbl. steam drive, cap. 700 cu. ft.
Air Compressor, 8½"x10" Worthington, b. d.
Arbor Press, No. 5 Greenerd.
Arbor Presses, Nos. 3 & 3½ Greenerd, on stands.
Arbor Press, 15 ton Hercules Power.
Arbor Press, No. 55 Atlas Pwr., b. d.
Bolt Cutters, 1" Acme Class "A".
Bolt Threader, 1" Landis, lead screw.
Bolt Thread. Mche., 1" Landis.
Bolt Thread Mche., 1" double spindle, with lead screw, 95% new.
Bolt Thread Mches., 1", 1½" and 2" Landis, double spindle.
Boring Mill, 72" Bickford vert., 2 hds.
Boring Mill, 51" Niles vertical, 2 hds.
Boring Mill, 51" Bullard vert., 2 hds.
Boring Mill, 42" Bausch vert., 2 hds.
Boring Mill, 36" Bullard NEW ERA TYPE vertical.
Boring Mill, 30" King vertical, turret head, power rapid traverse.
Boring Mill, 30" Gisholt vert., turret head, power rapid traverse.
Boring Mills, 24" & 36" Bullard vert., rapid production, turret and side hd.
Broaching Machines, Nos. 2 & 3 J. N. LaPointe Double.
Broaching Machine, No. 3A LaPointe (Hudson).
Broaching Mche., No. 2 J. N. LaP.
Broaching Mche., No. 3B J. N. LaP.
Chucking Machine, No. 22 New Britain Automatic, 12000 serial.
Chucking Machine, No. 5-A Potter & Johnston Auto., serial in 20,000's.
Chucking Mche., No. 33 New Britain Auto.
Chuck Mche., No. 6A P. & J. auto.
Drill, Gun Barrel, No. 1 Pratt & Whitney, 2-spindle.
Forcing Press, 15 ton Lucas Power, belt drive.

Die Slotter, Garvin.
Grinder, Springfield Swing Frame, arranged for motor drive, NEW.
Hack Saw, 6"x6" Peerless Power.
Hack Saw, 12x12" Racine, High Speed Power.
Hack Saw, 6"x6" Racine, High Speed, Power.
Hammer, 100 lb. Bliss Board Drop.
Hammer, 25 lb. Little Giant Trip.
Hammers, 40 & 60 lb. Bradley Helve.
Hammer, ¼" Schuster Riveting.
Hammer, No. 2A High Spd. Riveting.
Hammer, No. 3A High Spd. Riveting.
Hammer, No. 3A Hi-Spd. Riv., h. d.
Hammer, 600 lb. Chambersburg, single frame, steam.
Keyseaters, No. 5 Mitts & Merrill.
Keyseater, No. 0 M. & M., cap. ¼".
Press, No. 4 Niagara o. b. i. Power.
Press, No. 3 Bliss, Stiles pattern, Pwr.
Press, No. 73½ Bliss sq. crank, s. s. Power, with side shear.
No. 63 Consolidated sgl. crank, s. s. Power, att. for m. d.
Polishing Mche., Blevens, type "A".
Profilers, No. 12 P. & W. 2-spindle.
Profiler, No. 1 Garvin, 2-spindle.
Rivet Spinner, No. 80 Grant Noiseless.
Shear, 6" Toledo Power Squaring, 14 gauge cap.
Shear, 72" Kutchied Power Squaring, 12 gauge.
Tapping Machines, Nos. 2X and 2BG Garvin Automatic.
Tapping Mchs., Nos. 1 and 2 Garvin Auto.
Threaders, 4½"x12" and 6"x14" Pratt & Whitney.
Welder, American Elect. Spot, capacity 2 pieces of ¼" material.
Welder, Winfield Electric Spot, cap. to weld 2 pieces ¼" material.
Welder, Thomson Elect. Spot, No. 139.
Welder, Elect. Spot, Federal Jr., Auto.

Many Others. Send Us Your Inquiries.

We also buy machinery what have you to sell

EASTERN MACHINERY CO.
408 E. Pearl St., Cincinnati, Ohio

A Few of Our Bargains

12x52 Landis Plain Cyl. Grinder, late type, s. p. dr., like new	\$950.00
No. 10 B. & S. 6x24 Plain Grinder, ex. cond.	350.00
No. 16 Stoll, grd. o.b.i. Press; wt. 6000 lbs., like new	590.00
Waterbury-Farrel straight side, triple geared Press; 250-ton pressure; wt. 32,000 lbs., fair cond.	950.00
No. 21 Bliss o. b. i. Press, good condition	375.00
No. 2 hvy. duty, mfg. Colburn Drill; 3 sp. 22", like new	950.00
No. 2 4-spindle, as above; like new	1250.00
No. 2 single spindle, as above; like new	325.00
24" single spindle Colburn, type D-1; like new	490.00
4-spindle 16" Barnes, h. s. b. b. Drill; pwr. fd. and tapping attach. on each spindle; perfect cond.	900.00
20" "BB" Drill, power feed and back gears, new	107.50
16" Kerna h.s.b.b. Drill; reverse for tapping; ex. cond.	190.00
2-spindle Acme Bolt Cutter, 3/4" capacity, ex. cond.	350.00
2-spindle Morgan Bolt Cutter, 1 1/2" cap. good cond. 4 sets new chasers	250.00
24" G. & E. Shaper complete with vise and counter-shaft; equal to new in every respect; gearing perfect; a real bargain at	875.00
No. 2 G. S. Hendey Universal Miller s. p. dr. complete with regular equipment; like new	1450.00
No. 1 Garvin Universal Miller, dividing heads and vise; good condition throughout	350.00
No. 4 National Transit Plain Miller, hvy. duty type, geared drive and geared feeds, a powerful stock remover, like new	1050.00
No. 5-C Becker Vertical Miller, rebuilt; all surfaces replaned and refitted; new parts and gears where necessary; guaranteed to be equal to new	1250.00
No. 4-B Becker Vertical, rebuilt, like above	750.00
20x12 Hendey, late type, Lathe; reg. equip.; like new	1075.00
14x6 Hendey Tool Room Lathe, late type, regular equipment, like new	750.00

We specialize in rebuilt lathes and millers

A. R. Marsh Machinery Co.

4900 West 73rd St., Cleveland, Ohio

Partial List Of Our Machinery Attract

Send Us Your Inq

ENGINE LATHES

14"x 6' LeBlond, l. c. g. and chuck.
14"x 6' Hamilton.
14"x 6' Porter, compound rest and taper attachment, l. c. g.
16"x 8' Bradford, c. r., loose change gear.
16"x 8' Monarch, compound rest, standard pattern.
16"x 8' Rockford, c. r., q. c. g., 3-step cone.
18"x 8' Boye & Emmes, c. r., q. c. g.

16"x 8' Hendey, c. r. and t. a., q. c. g. without tie bar.
18"x 8' Prentice, compound rest, l. c. g., chuck.
18"x 7' Fulton heavy duty friction hd. pl. turning lathe, pan bed, dbl. tool post and countershaft, new.
18"x 10' Star, 4-a. c., a. g., with 16" 4-jaw ind. chuck.
24"x 12' Schumacher & B., c. r., q. c. g.
30"x 10' S. & B. c. r., loose change gear

TURRET LATHES AND SCREW MACHINES

No. 00 Brown & Sharpe auto.
No. 0 Brown & Sharpe auto.
12" W. & S., friction head.
12" W. & S., friction head, with set-over turret.
14" W. & S., friction head, (2).
16" W. & S., friction head.
No. 4 Warner & Swasey, p. h., a. c. and b. f.
No. 2 Warner & Swasey, p. h., a. c. and b. f.
No. 4 Warner & S., g. f. h., a. c. and b. f.
No. 55 Nat'l Acme 4-spdl. auto.
No. 3 Foster g. f. h. turret screw mch., with p. f. carriage and turret.

24" Cleveland model "A" auto. screw mch., with 5-hole turret.
No. 2-G Brown & Sharpe auto-matics (2).
No. 2 Brown & Sharpe turret forming (2).
1-4"x 10" Millholland, geared friction head with p. f. to turret (3).
4" Pratt & Whitney hand screw mch.
No. 4, 14" Acme Machine Tool Company's geared friction head with p. f. to turret.
1"x 7" Millholland turret screw mch., pl. hd. auto. ck., bar feed hand fd. cross slide, with power fd. tur., new.

DRILLING MACHINES

No. 1-S Garvin duplex.
3' American sensitive radial with t. a. and elevating table.
4' Mueller, gear box, sgl. pulley dr.
5' and 6' Americans, tr. grd., 8-speed change, gr. box, sgl. pulley drive.
6' Western, with speed box, tap. att.
No. 14 Colburn heavy duty.
12-spindle Moline, cam fd., two tbl.
No. 14 Natco.
No. 22 Colburn, sgl. sp., hvy. duty, 1 1/2" cap., with solid spindle and flange for receiving multiple drill heads, new, (2).

3-sp. Edlund, high sp., ball bearing.
Fox multiple spindle, sliding head, arranged for 12 spindles (4).
No. 30 Natco, belt driven.
No. 44 Colburn, sgl. sp. heavy duty, 2 1/2" cap., with solid sp. and flange for receiving multiple drill heads, new, (2).
Colburn horizontal duplex drill, 2 1/2" cap., with rotating table, arranged for motor drive, new.
No. 34 Demco high speed bench drill with C spindle, new.

The Strong, Carlisle & Hammond Co.

Used And Rebuilt Actively Priced Inquiries

MILLING MACHINES

No. 0 Bickett, hand, bench type, (3).
No. 2 Cincinnati vertical, s. p. d.
No. 4-B B. & S. pl., constant spd. dr.
with pump and rapid pwr. traverse.
Becker 2-spindle, with rotary table.
U. S. Hand Miller.

24"x18"x60" Ingersoll, Farwell vertical milling head.
No. 12 B. & S. manufacturing.
13-B Brown & Sharpe, plain manufacturing, (2).

SHAPERS AND PLANERS

16" American back geared, single pulley drive, motor driven, 440 volt, 3 phase, 60 cycle mtr., t. b. control.
20" Hendey friction, (2).
16" Smith & Mills, back grd. crank.

22"x22"x 8' Putnam planers, (2).
30"x30"x10' Woodward & Powell, three heads.
72"x72"x26" Fitchburg, four heads.
38"x38"x10' Pond, 2 heads on rail.

CENTERING MACHINES

Centering machines, single spindle Cadillac.

GRINDERS

No. 2 Cincinnati univ., latest type.
No. 3 Diamond wet tool grinder with drop apron, new.
No. 4 Diamond wet tool grinders with drop apron, new.
No. 10 Brown & Sharpe plain.
No. 14-48" B. & S. plain, (3).
No. 14 30" B. & S. plain, late type.
No. 24 Landis plain.
8" Heald rotary surface grinder with magnetic chuck.
No. 6-A Bryant internal.
Webster & Perks, h. s. b. b., double spindle polishing lathes, cabinet base (9).
No. 3 Brown & Sharpe planer type surface grinder.

No. 14 Besly disc grinder.
No. 10-18" Besly disc grinder.
No. 6-18"-1 Besly disc grinder.
Gisholt universal form tool grinder.
J. B. Point "Yankee" drill grinders, complete, new.
Type "DE" Hisey-Wolf internal.
No. 11 Brown & Sharpe pl. grinders.
Plain emery wh'l stand with column.
No. 2 Woods cutter and reamer grinder, complete, new.
20" Whitney wet tool grinders, complete with countershaft, new, (2).
C3A Grand Rapids duplex drill grinders with wet att., new, (2).
Landis Internal, with countershaft.
No. 2 Brown & S. Surface Grinder.

MISCELLANEOUS

Arbor press, No. 28 Atlas.
Boring and Turning Mills, 32" King Vertical, 2 swivel heads, motor driven (2).
Boring or drilling machine, No. 1-S Garvin duplex horizontal.
Broach, No. 2 double Lapointe.
Gear Cutter, No. 4-48" B. & S.
Hand brake, 5' Dreis & Krump.
Keyseater, No. 0 Baker, practically new.
Layout plates, 30"x26" and 38"x48" C. I., mounted on portable stand.

Marking machine, Etchograph.
Oil extractor, No. 150 Curtis.
Oil extractor, No. 400 Curtis with hoist.
Oil extractor, large size American, with pedestal for motor drive.
Pipe machine, No. 300 Oster, 1" to 2".
Pipe machine, 8" Jarecki, No. 88.
Power Press, Max Arms S. S. Plain, 5" stroke, on inclined legs.
Profiler, No. 12, 2-spdl. P. & W. vert.
Scleroscopes, Shore.
Slitting shear, No. 206 Niagara, pwr.

Cleveland, Ohio; Detroit, Michigan

Bath's Guaranteed

Boring Mills—Horizontal

- 3½" P. & H. motor drive.
3½" Landis, floor type, motor dr.
4¾" Niles, motor drive.
6½" Niles, motor drive.

Boring Mills—Vertical

- 24" Bullard vertical turret lathe.
44" Baush, 2 heads, belt drive.
48" Colburn, 2 heads, arr. m. d.
51" Niles-Bement-Pond, agl. pul.
72" Cincinnati, 2 heads, motor dr.
72" King, 2 heads, rapid traverse.
84" Niles-Bement-Pond, 2 heads.
10' Betta, 2 hds., hvy. duty, m. d.
10'—16' Bement-Miles with extension head.
10'—16' Niles, 2 hds., friction fd.
16'—24' Niles, with central bor. hd.

Cranes

- 15-ton P. & H. 44' 2" span, 3-motor, 220 volt, D. C.
15-ton Niles, 51' 10" span, 3-motor, 220 volt, D. C.
5-ton Euclid electric hoist, 220 volt, A. C.

Drills

- 4' Hammond sensitive radials with tapping attachment.
4' Prentice radial, motor drive.
6' Pond radial, belt drive.
8' Cleveland wall radials.
No. 310 Baker, hvy. duty, 3" cap.
No. 25 Foote-Burt heavy duty, 3" capacity.
32" Aurora, sliding head.
2-spindle Foote-Burt, hvy. duty.
4-spindle Foote-Burt.
4-spindle Moline, 2" capacity.

Forging Machines and Bulldozers

- 2" Ajax geared, cast iron bed.
4" Ajax geared, steel bed.
No. 2 Williams & White bulldozer.
No. 2 Ajax high speed bulldozer.
½" Manville O. D., D. S. cold header.

Grinders

- 18x96" Norton, cylindrical, belt dr.
84" Diamond face, motor drive.
26" horiz. disc grinder, belt drive.
Grinder stands and drill grinders.

Keyseaters

- No. 2 Baker Bros., power feed, belt drive
No. 5 Mitts & Merrill, 3½" capacity.

Lathes

- 16"x6' Pratt & Whitney, tool room, taper attachment.
16"x8' Pratt & Whitney, taper and relieving attach.
30"x14' Schumacher & Boye, cone drive.
36"x14' Schumacher & Boye, triple geared.

Milling Machines

- Type B Briggs Lincoln millers.
20"x7"x18" Oesterlein, belt drive.
No. 0 Rockford, plain, belt drive.
No. 2-B Heavy Brown & Sharpe, M. D.
No. 4 Cincinnati hi power, vertical.
Type C Becker vertical.
38"x26"x20' Ingersoll, 4 head, planer type.
48"x42"x14' Newton, planer type.
72" Ingersoll, 4 head, adjustable rail.
84"x36"x16' Ingersoll, 4 heads.
24"x24"x20' Ingersoll, 3 heads.

CYRIL J. BATH & CO., E. 70th &

Cleveland Stock

Planers—Openside

48"x60"x16' Detrick & Harvey, 3 heads.

72"x72"x16' Detrick & Harvey, 3 heads.

Side jack for 48" planer.

Planers and Shapers

36"x36"x18' Cincinnati heavy duty, 4 heads.

48"x36"x18' Cincinnati, 4 heads, Motor Drive.

48"x48"x16' Cincinnati, 4 heads, Motor Drive.

48"x48"x14' Hamilton, 4 heads, Motor Drive.

60"x60"x20' Cincinnati, 3 heads, Motor Drive.

96"x96"x16' Pond, 4 heads, belt drive.

14"x10"x24' Bement, 4 heads, Motor Drive.

60" Morton draw cut shaper.

24" Gould & Eberhardt Crank Shaper, back geared, cone drive.

Punches and Shears

48" throat Bement-Miles, arch. jaw, 1¼"x1".

No. 90 Amplex triple combination punch, plate shear, bar, T and angle cutter.

Garrison steel bed alligator shear, 2" capacity.

Niagara circle shear, ¼" capacity.

½" cap. Lennox rotary shear.

¾" cap. Lennox rotary bevel shear.

Riveters and Saws

36"x20"x10" Allen riveter, cap. ¾" rivets.

No. 3 Ryerson friction saw, motor drive.

No. 0 Ryerson friction saw, motor drive.

9A Racine power hack saw, cap. 12"x15".

Slotters

20" Bement crank, cone drive.

48" Niles-Bement-Pond, m. d.

36" Bement crank.

Tumbling Barrels

18"x30"x48" steel lined, in pairs. Roller bearings, with dust exhaust, quick acting. Double cover plates. Mounted so that one may be loaded while the other idles.

Turret Lathes and Screw Machines

No. 1-B Foster universal turret lathes.

3"x36" Jones & Lamson, geared head.

MISCELLANEOUS

Bending rolls, plate, one set 10' Hilles & Jones ½" capacity, arranged for motor drive.

Bolt cutter, 1¼" Landis, dbl. hd.

Blowers, No. 4 Root, positive pressure, also Nos. 1 and 2, Buffalo Forge.

Brake, 60" Van Dorn geared.

Hydraulic press, 15-ton cap.

Hammers, 100 lb. Bradley horizontal helve.

Hoist—½ to 6 ton, chain.

Oil separator, National, 3600 cu. in. cap.

Pipe Machine, Merrill, 8" cap.

Machinery Av., N. E., Cleveland, O.

ReMANUFACTURED Insure High P - (ORIGINATED BY US) - MACHINE TOOLS At Low

REG. U. S. PAT. OFF.

This is only a partial list. Write for price on any tool you need, whether listed below or not.

Lathes

- 1-48"x50' Pond.
- 1-45"x24' Pond.
- 1-42"x50' Putnam Grd. Hd.
- 1-42"x50' American Grd. Hd.
- 1-36"x71' American Grd. Hd.
- 1-30"x16' Ryerson Grd. Hd.
- 5-26"x16' Niles-Bement-Pond.
- 10-26"x16' Bridgeford.
- 5-26"x14' Niles-Bement-Pond.
- 5-26"x12' Bridgeford.
- 13-26"x11' Wickes.
- 40-26"x10' Niles-Bement-Pond.
- 21-26"x10' Canada.
- 15-26"x10' Whitcomb-Blaisdell.
- 44-26"x10' Bridgeford.
- 12-25"x12' LeBlond.
- 1-24"x20' Reed-Prentice, Grd. Hd.
- 1-24"x18' L. & S. Sel. Grd. Hd.
- 1-24"x16' L. & S. Sel. Grd. Head.
- 9-24"x10' Cisco.
- 5-20"x22"x16' American.
- 1-20"x10' Hamilton, M. D.
- 1-20"x 8' Hendey.
- 30-20-22"x8' American.
- 1-18"x8' Greaves-Klusman.
- 3-18"x8' Lodge & Shipley.
- 1-16"x14' Reed-Prentice, G. H.
- 7-16"x 8' Rockford Mfg.
- 2-16"x6' Pratt & Whitney.
- 1-14"x6' American Geared Head.
- 3-6" Fitchburg Loswing.
- 5-3 1/2" Fitchburg Loswing.

Horizontal Boring Machines

- 1-No. 6 Defiance.
- 1-No. 9 Fosdick.
- 3-60" Gisholt.
- 3-No. 1 Barrett.
- 2-Rockford.

Auto. Screw Machines

- 7-No. 6-A Potter & Johnston.
- 2-No. 5-A Potter & Johnston.
- 1-No. 56 National Acme.
- 1-2" Cleveland.
- 1-1"x5" New Britain.

Turret Lathes

- 2-24" Steinkle; 1-24" Gisholt.
- 2-21" Gisholt.
- 3-20"x8" American.
- 1-No. 6 Brown & Sharpe.
- 1-No. 7 Foster, Geared Head.
- 2-3"x36" Jones & Lamson.
- 7-2-spindle Jones & Lamson.
- 3-16" Cincinnati-Acme-Fox.

Vertical Boring Mills

- 2-72" Gisholt.
- 1-60" Pittsburg.
- 2-42" Gisholt.
- 1-42" King.
- 2-36" Bullard, New Era.
- 1-36" Gisholt.
- 1-32" King.

Radial Drills

- 1-6' Western.
- 2-4' Western.
- 1-3' Gang Sensitive.
- 1-3' American Sensitive.



Phone
HAYmarket
7660

HILL, CLARKE & CO. OF HIC

Production Low Cost

Drill Presses

- 1—No. 17 4-spindle Foote-Burt.
- 1—No. 3 6-spindle Foote-Burt.
- 1—6 spindle Henry & Wright.
- 1—22" Barnes, Self Oiling.

Gear Cutters and Hobbers

- 1—No. 5 60" Brown-Sharpe.
- 1—No. 12 Barber-Colman.
- 1—No. 13 Brown & Sharpe.
- 1—No. 6 Fellows.
- 1—No. 3 36" Brown & Sharpe.

Milling Machines

- 2—No. 4 Cincinnati, Hi-Power.
- 1—No. 3-B Milwaukee.
- 1—No. 3 Kemp-Smith.
- 2—No. 3 Cincinnati.
- 2—No. 3 Brown & Sharpe.
- 1—No. 2 Cincinnati.
- 3—No. 0 Brown & Sharpe.
- 1—No. 0 Rockford.
- 1—No. 25 Becker.
- 1—No. 2 Hendey Universal.
- 1—No. 29 Ohio Universal.
- 1—No. 1-D B. & S. Universal.
- 2—No. 1 1/2 Garvin Duplex.
- 3—No. 1 Van Norman, Hand.
- 4—Type B Briggs.

Vertical Millers

- 1—Model ACS 2-spindle Becker.
- 2—Model SD Becker.
- 3—No. 6 Becker.
- 1—No. 5-C Becker.
- 1—No. 5-B Becker.
- 5—No. 4 Cincinnati.
- 1—No. 3-B Milwaukee.

OUR GUARANTEE

Your money back if you return a machine within thirty days. No excuses necessary.

- 1—No. 2-B Milwaukee.
- 2—No. 4-B Becker.
- 2—No. 3 Cincinnati.

Planers

- 1—72"x84"x12" Gray.
- 1—42"x42"x22" D. & H.
- 1—42"x42"x 9" Niles - Bement - Pond.
- 1—42"x36"x14" Cincinnati.
- 2—36"x36"x18" Cincinnati.
- 1—36"x36"x16" Rockford.
- 1—36"x30"x20" Whitcomb-Blaisdell.
- 1—30"x30"x 8" Niles - Bement - Pond.
- 1—30"x30"x 8" Liberty.
- 2—24"x24"x6" Gray.

Grinders

- 1—24"x96" Norton.
- 1—18"x96" Norton.
- 2—16"x50" Norton.
- 2—14"x72" Norton.
- 4—14"x50" Norton.
- 1—12"x120" Landis.
- 1—10"x120" Norton.
- 1—10"x72" Norton.
- 1—No. 16, 10"x72" B. & S.
- 1—10"x52" Landis.
- 6—10"x50" Norton.
- 1—No. 14, 10"x30" B. & S.
- 2—10"x36" Norton.
- 1—10"x24" Norton.
- 9—6"x32" Norton.
- 1—6"x18" Landis.
- 2—No. 2 Brown & Sharpe Univ.
- 1—12"x36" Cincinnati Universal.
- 1—No. 2 Landis Universal.
- 2—No. 2 Universal.
- 3—No. 60 Heald. 1—No. 70 Heald.

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No. 0 Giddings & Lewis Horizontal Boring Mill,
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60" Brown & Sharpe Spur Gear Cutter.
36"x28' Lodge & Shipley Geared Head Lathe,
with taper attachment.
48"x48"x12' Cleveland Open Side Planer, 2 rail
heads, 1 side head.
12" Heald Rotary Surface Grinder.
6"x32" Norton Plain Grinder.
10"x50" Norton Plain Grinder.
No. 14 Brown & Sharpe Plain Grinder.
14" Pratt & Whitney Vertical Surface Grinder.
3' American Plain Radial, arranged for a. c.
motor drive.
3½' Fosdick Plain Radial Drill.
4' Western Plain Radial Drill.
No. 2 Baker Keyseater.
Cincinnati Plain High Power Milling Machine,
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- 1—No. 2, 6—2" spindles with No. 3 Morse taper, Baush.....\$350.
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- 1—Chaser and die grinder, Geometric?\$60.

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- 1—34" single-spindle, Gridley.....\$600.
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- 20"x8" Oliver, Q. C. G.
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- No. 7 Foster 3½" Capacity.
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- 8"x8" Ingersoll Rand.
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- 1--3"x3½" Gardner.
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MILLING MCHES.

- 2--No. 2 Owen Universal.
- 1--No. 2 American Plain.
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- 2--No. 3½ Fox Hand Millers.
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- 1--No. 1 Davis Keyseater.
- 1--No. 2 Davis Keyseater.
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- 1--No. 1 Marvel Hack Saw, New.
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- 14" 4 Spindle Barr Drill.
- 2--14" U. S. Drill.
- 1--14" Exceluor.
- 14" 2 Spindle Barr.
- 14" Esley.
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- No. 2 American Can Kick Press.
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 PRESS, Consolidated No. 165 Double Crank, geared.
 PRESS, Ferracute SRG-101 Double Crank, geared.
 PRESS, Toledo No. 59¼ S. S. grd., wgt. 75000 lbs.
 PRESS, Zeh & Hahnemann No. 20 Percussion.
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 PUNCH, Beloit No. 62, cap. ½" thru ¼".
 PUNCH, Cleveland Style C, cap. 13/16" thru ¾".
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 PUNCH, Cleveland Multiple, 12" throat.
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13"x5' Blount Speed Lathe, Belt.
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3"x36" P. & W., belt.
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H-36"x36"x10' Pond, 3 hds., r. m. d.
H-36"x36"x12' Pond, 4 hds., r. m. d.
H-36"x36"x14' Pond, 2 hds., r. m. d.
H-42"x42"x14' Pond, 4 heads, belt-
ed, m. d.
H-42"x18"x20' Pond. Extra Heavy
Frog and Switch, 2 heads, r. m. d.

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No. 1 Bement Vert. Cotter, Belt.
5' Right Line Full Universal motor.
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H-No. 1 14" Barr 1-sp. Sens., Belt.
H-16" LeBlond 1-sp. Sens., Belt.
H-20" Aurora W. & L. Feed, Belt.

Millers

Whitney Hand, belt.
No. 4 Cincinnati Universal, motor.
No. 6 Becker-Brainerd Vertical, belt.
6"x132" P. & W. Thrd Miller, Belt.
H-No. 3H LeBlond Plain, cone dr.

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22" Bement Slotter, motor.

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20"x12' Clement Lathe, Belt.
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Niles 75-Ton 4-Motor Electric Traveling Crane, 49' span, with 10-
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No. 6 Blount Grinder, Belt.
18" Grinder and Polisher, belt.
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24" Gleason Bevel Planer, belt.
36" No. 4 B. & S. Spur Cutter, belt.

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LeBlond No. 1 Cutter, belt.
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34" Sp. Ridgway Hor., motor.
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H-44" Niles, with r. h. tur. hd., mtr.

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5 ton, 3 motor, 34' 8" span.
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30-ton, 4-motor, 34' 8" span, 5-ton aux.
25-ton, 4-mtr., 71' 11" span, 5-ton aux.
40-ton, 4-mtr., 71' 11" span, 5-ton aux.
2-ton, 2-motor, wall crane, 19' arm.

Miscellaneous

Y & T 3-ton Hand Crane, 35' 6" span
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Saw Belt.
100—Card Dey Time Regis. Clocks.
H-3"x3" Cap. 12" Throat, L. & A.
Hor. Punch Motor.
H-185 lb. Motor Driven Air Ham.

High Grade Machine Tools

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44"x40' Pond, cone drive, L. C.
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36"x16' Fay & Scott, L. C.
27"x12' LeBlond, Q. C. late type.
25"x10' LeBlond, Q. C. late type.
24"x12' LeBlond Lathe.
24"x10' L. & S., Q. C. late type.
21"x10' LeBlond, Q. C. late type.
24"x8' Schumacher, Boye & Emmes,
Q. C. 3 S. C. D. B. G.
18"x8' American, Q. C. Cone drive.
18"x 8' Rahn-Larmon Q.C. late type.
14"x 6' Hendey, Yoke Head.
9"x20' Rivett Bench Lathe.

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4' Bickford, Gear Box, S. P. D.
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5' Cincinnati Bickford Full Universal,
G. B. D.
6' Dress Gear Box Drive.
26' Cincinnati Upright, C. D.
26' Rockford Upright, C. D.
25' Barnes Upright, C. D.
25' Superior Upright, C. D.
21' Canedy-Otto, B. G. P. F.

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27"x27"x8' Woodward & P., 1 head.
24"x24"x12' Chandler, 2 heads.
26"x26"x12' Blaisdell, 2 heads.
32"x32"x16' American, 2 heads.
32"x32"x16' Gray, 2 heads.
48"x48"x16' D. & H. Opens. 2 hds.

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Cleveland Horizontal 2½" bar.
No. 1 Rockford, 2" bar.
30" Colburn, Vertical.
36" Bullard New Era type.
36" Bullard, Rapid Production Vertical
Turret Lathe.
51" Bullard Vertical, 2 heads.

Gear Cutters

Whiton Auto. 36", Bevel & Spur.
36-H G. & E. Gear Hobber.
6" Gleason Generator.
18" G. E. Gear Hobber.

Grinders

No. 60 Heald, \$275.00 each.
10"x20" Landis.
10"x36" Landis, self contained.
No. 2 Wilmarth & M. Tool Grinder.
12" Pratt & Whitney Vert. Surface.
14" Pratt & Whitney Vert. Surface.
No. 1 LeBlond Tool Grinder.
Modern Chaser Grinder.
Yankee Drill and Tool Grinder.

Shapers

7" Rhodes Shaper.
15" Springfield, cone drive.
16" Gould & Eberhardt Hi. Duty, cone
20" Barker, cone, B. G.
20" Hendy.
20" Cincinnati, cone, B. G.
20" Smith & Mills, cone, B. G.
24" Barker, cone, B. G.
28" Queen City, S. P. D.

Milling Machines

No. 6 Whitney, Hand.
No. 3 Cincinnati, Plain, Cone.
No. 3 LeBlond Heavy, Cone.
No. 3½ Fox Hand and Power.
No. 2 Kemp Smith Plain, cone drive.
No. 1½ Valley City.

Miscellaneous

1" National Bolt Cutter, complete.
No. 3 Woods Tilted Turret.
No. 195 American Can Punch Press.
No. 4 McDonald Punch Press.
No. 2 Kane & Roach Multiple P. & S.
No. 120 Grant Riveting Machine ¾".
100 lb. Little Giant Hammer.
50 lb. Little Giant Hammer.
Whiting Punch & Shear, No. 8, 36"
throat, 1¼"x1¼".
Wicks Punch & Shear, 48" throat,
1½"x1½".
No. 8 Long & A. Punch & Shear.
10" Bertsch Power Squaring Shear,
14 gauge.
Toledo Spot Welder, 12 K. W.

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10"x50" Norton Plain External Grinder—Swings 11" over table; will take cylinder work from 1/2" to 4" in diameter and up to 50" long; three steady rests; center grinding fixture; countershaft; pump.

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No. 65 Heald Cylinder Grinders—Entirely self-contained; will grind holes 3" diameter or larger; 15" long; table 36"x18".

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10"x72" Norton Plain External Grinder — Equipped with back rests, pump, tank and countershaft.

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10"x36" Norton Plain External Grinders—Overhead drive; size wheel 18"x2"x5"; three steady rests; center grinding attachment; countershaft and pump.

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14"x72" Norton Plain External Grinder — Complete with steady rest, center grinding attachment, pump, tank and countershaft.

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(Engine)

1—16"x6' Reed, Change gears, compound rest \$ 150.

(Turret)

2—2¼" J. & L. Flat Head, sgl. pulley drive bar equip. each 300.

1—3"x36" P. & W., bar equipment, 3 step cone bk. grd. 300.

2—Model H. 21" Gisholt, taper attachment, each 550.

MILLERS

(Vertical)

2—No. 2 Beckers, cone drive, countershaft, each \$ 375.

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(Plain)

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1—24x34x16' Cincinnati, two heads, 1,200.

1—30x30x20' Woodward & Powell, 2 heads, 500.

1—30"x30"x12' Whitcomb, two heads 1,250.

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1—42x42x26' Woodward & Powell, 2 heads on rail and 2 side heads 2,200.

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1—No. 2 B. & S. Universal 200.

1—10x72 Norton plain, 600.

1—No. 1 Norton Cutter and Reamer, 125.

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1—Mummert-Dixon Oil Stone 40.

MISCELLANEOUS

1—36" Fellows Gear Shaper \$ 200.

1—Betts Machine Company Rack Cutter 150.

1—Gear Tooth Rounder, 50.

1—¾" Gridley Single Spindle Automatic 300.

1—Becker Cutter Relieving Machine 1,250.

1—Kidder Universal Saw Table 75.

1—type M Dings Magnetic Separator 100.

1—Oil Separator, 18"x8" pot 25.

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Baush Multiple Drill, 12-spindle.
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24"x12" Rockford, taper att.
24"x15" Schumacher-Boye cone head.
26"x16" Prentice, taper attachment.
26"x24" Putnam, p. c. f.
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1"x15" Pratt & Whitney Turret Lathe.
No. 4 Wood Turret Lathes, cap. 1".
No. 1 Cincinnati Universal, No. 2 Plain.
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- PUNCH & SHEAR:**----- Canedy-Otto, hand power, $\frac{1}{2}$ "x $\frac{1}{2}$ ".
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Besly No. 3 Disc.
Emery Double End takes 12"x2" wheels.
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Planer, Flather 48"x48"x16" heavy duty.
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Planer, Detrick & H. Openside, 96"x72"x26".
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Presses, Arbor, 20 ton Weaver; No. 3 $\frac{1}{2}$ Greenerd.
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Saw, 18" Higley Cold.
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Screw Machine, Cone 1 $\frac{1}{4}$ " Multiple Spindle.
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- 7—P. & W. Nos. 12, 13.

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- 3—Thompson univ.
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- 1—B. & S. No. 2 surface.

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- 1—Heald No. 20, 8" surface.
- 2—Heald No. 22, 12" rotary surface.
- 1—Persons Arter 12" rotary surf.
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- 15—New Star 11x5, 13x6.
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- 5—L. & S. 16"x6"; 16"x8".
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- 1—Fay & Scott 20-42" gap.
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- 1—Greaves-Klusman 26x12".
- 1—Whitcomb-Blaisdell 26"x12".
- 3—LeBlond 26"x10" duplex crank.
- 1—Johnson 30"x12"; m. d.
- 1—Hendey 32"x12".
- 1—Bridgeford 32"x26"; pat. grd.
- 1—Bridgeford 42"x38"; grd. hd.
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- 4—Cleveland 2", 3", 4", 5", 6", 8", 10", 12", 14", 16", 18", 20", 22", 24", 26", 28", 30", 32", 34", 36", 38", 40", 42", 44", 46", 48", 50", 52", 54", 56", 58", 60", 62", 64", 66", 68", 70", 72", 74", 76", 78", 80", 82", 84", 86", 88", 90", 92", 94", 96", 98", 100" "B".
- 11—Gridley 9/16", 1", 1 1/4", 1 1/2", 1 3/4", 2", 2 1/4", 2 1/2", 3", 3 1/2", 4" spindle.
- 10—Gridley 3 1/2", 4 1/2" single.
- 6—New Britain Nos. 23, 24, 34, 53.
- 4—National A. Nos. 52, 54, 56, 515.
- 11—P. & J. No. 5-A, No. 6-A.

MILLING MACHINES

- 5—B. & S. Nos. 2, 3, 4, plain.
- 6—Cincinnati Nos. 2, 3, 4 plain.
- 2—Garvin No. 13 1/2 plain.
- 1—Hendey Norton No. 3 plain.
- 1—Kemp Smith No. 3 plain.
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- 1—Hendey No. 2-G univ.
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- 1—Reed Prentiss vertical.
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- 3—No. 4 Gardner disc.
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- 1—No. 3—26 B. & S. gear cutter.
- 1—No. 3—26 Newark gear cutter.
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- 2—J. & L. 2 spindle turret lathes.
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Used No. 2 Kempsmith universal.
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Used No. 3 Brown & Sharpe, plain.
Used No. 3 Cincinnati pl., vert. att.
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Used 2-spindle Avey ball bearing.
Used 6-spindle Allen.

RADIAL DRILLS

Used 5' Dreses.
3 $\frac{1}{2}$ " Mueller, single pulley drive.

UPRIGHT DRILLS

Used 20" and 24" Barnes, all geared.
Used 24" Rockford sliding head.
Used 25" Barnes, stationary head.
Used 26" Barnes, sliding head.

MULTIPLE DRILLS

New Baush No. 4 hd. 22x52 41 spdls.
New Baush No. 4 hd. 30x46 22 spdls.
Used No. 11 Pratt & Whitney, 16 sp.

SHAPERS AND PLANERS

Used 14" and 16" Smith & Mills.
Used 16" Kelly shaper.
Used 20" Columbia, back gear.
Used 20" G. & E. back geared.
Used 24" Cincinnati, b. g.
Used 24" Gould & Eberhardt, b. g.
Used 26"x36"x8' Flather, 1 head.
New 36"x36"x12' W. & P., 2-heads.

GRINDERS

New Morse No. 3 plain, 8"x40".
Used No. 10 B. & S. plain, 6"x20".
Used Gisholt tool grinder.
New Churchill internal.
New No. 9 Cincinnati internal.
Used Bridgeport No. 110 knife grinder, belt or motor drive.

TURRET LATHES AND SCREW MACHINES

Used No. 4 W. & S. universal.
Used No. 3A W. & S. universal.
Used No. 6A P. & J., motor driven.
Used 24" and 3" J. & L., motor dr.
Used 24" Gisholt, 6 $\frac{1}{2}$ " hole.
Used 14" Gridley automatic, 4-spindle, motor driven.
Used 1" Pierce Screw Machine.
Used No. 3 Superior Screw Mche.
New No. 4 Wood Turret Lathe.

MISCELLANEOUS

New 4" Standard pipe machine.
Used 4", 8" and 12" Bignall & Keeler pipe machines.
Used Napier Band Saw
New No. 3-B LaPointe broach.
New Nos. 1, 2, 3, 4 and 5 Federal presses o. b. i.

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Small well equipped manufacturing plant, with 8,500 square feet of floor space. Equipment site is ideal for light manufacturing of contract die and tool work.

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72" Betts, Power Rapid Traverse, two swivel heads, motor drive.

60" Colburn, Power Rapid Traverse, two swivel heads, single pulley drive.

60" Bullard, two swivel heads, belt drive.

53" Niles-Bement-Pond, Power Rapid Traverse, two swivel heads, motor drive.

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 20" Newton Cold Saw Cutting Off Machine.
 1½" National Double Head Bolt Cutter and Threader.
 No. 75½ Bliss Straight Side Press, side shear 6" str.
 16x68 Landis Crankshaft Grinders.
 No. 5-C Becker Vertical Improved Miller.
 12x12 Gardner Hor. Belted Compressor 350 cu-ft. cap.
 19x14 Chicago-Pneu. Dbl. Cyl. Belted Compressor 600 cu-ft.
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 Drill, 4-spindle Leland-Gifford, H. S., B. B., $\frac{1}{4}$ " cap.
 Radial, 3rd Marsh, sensitive, motor drive.
 Radial, 4th Cinc-Bickford, plain, Q. C. G. box.
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 Lathe, 15th x 10th South Bend, Q. C. G., single B. G.
 Lathe, 17th x 8th Sidney, Heavy Pattern, Q. C. G.
 Lathe, 20th x 8th Lodge & Shipley, single B. G., 5-step cone.
 Lathe, 24th x 14th Davis & Egan plain, B. G., 5-step cone.
 Miller, 32th Kempsmith plain, dividing head.
 Miller, No. 3 Cincinnati, Universal, belt drive.
 Planer, 24th x 24th x 6th Gray, 1 head; 16th Niles plate, *Send For Photo.*
 Planer, 30th x 30th x 8th Gray, one head.
 Planer, 36th x 36th x 12th Cleveland, O. S., two heads.
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- 1—No. 54 A Toledo, arch m. d.
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- 1—No. SN-203 Ferracute, 52" bet. up.
- 1—No. 55 V. & O. geared, 44" bet. up.

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- 1—No. 17 Toledo, flywheel, 20" thrt.
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No. 3 Wilmarth & Mormon Surface Grinder.
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No. 3 Van Norman Miller, sub-head.
No. 3 Cincinnati Universal Miller.
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Lambert Horizontal Boring Mill, 3" Bar	\$1250.
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No. 2 Brown & Sharpe Plain Miller	\$ 495.
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Machines with Friction Geared Head.

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Drill

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today.*



Floor Grinder

The Cincinnati Electrical Tool Co.

2701 Madison Rd., Cincinnati, Ohio



Tool Post Grinder

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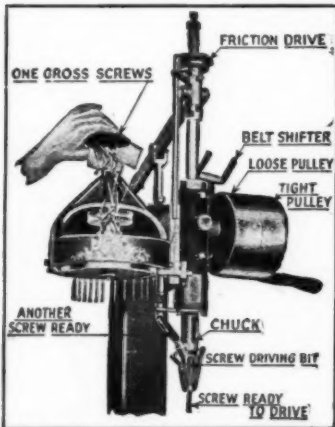
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**The
Reynolds
Machine
Company**
Dept. H. H.,
Massillon, Ohio

Showing Magazine Feed of the Reynolds Automatic

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New Britain, Conn.

